"Health is the foundation of all our physical happiness."—HERDER.

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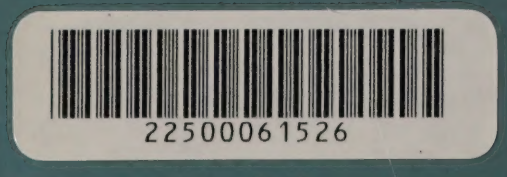
EDITED BY DR. ANDREW WILSON. F.R.S.E. &c.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"Reason's whole pleasure—all the joys of sense—
Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

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HEALTH

EDITED BY

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE Sixth Annual Congress of the Sanitary Institute of Great Britain, held at Glasgow last week, passed off most successfully. We do not remember to have seen a Congress at which a larger selection of varied, interesting, and practical papers was presented. From the President's address downwards, the communications were thoroughly enjoyable, and the Congress of this year, in respect of the fulness of its details, will certainly redeem the Sanitary Institute from any suspicion of the *dilettantism* which too often creeps over the spirit of such gatherings. That the people cannot hear too much about health and physical well-being is a sound maxim. Despite educational advance, a knowledge of even the simplest laws of health lingers long. Educated persons are daily found breaking or neglecting these vital laws, and misery, pain, and expense are continually appearing before us as the results of the contravention of health conditions seen in all classes and ranks of society. It is clear that, the wider the scope which sanitary institutes and associations give themselves, the greater will be the amount of benefit which will accrue from their labours. Every man, woman, and child who is made to think even a single thought about health and its problems, represents a recruit to the great army of reformers. All health improvement means and includes individual effort, and flourishes only upon the intelligent culture of health-science in the family and home.

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PROFESSOR HUMPHRY'S Presidential address at Glasgow was eminently enjoyable. Perhaps the speaker was at his best when he dealt with educational questions in relation to health. His tilt against the cram system was effective, and his prescription of the gymnasium and lawn-tennis court, as antidotes to and preventives of over-study in both sexes, should be laid to heart by all who have to do with the health of students.

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THE remarks of Dr. Humphry on "Ventilation" dealt with an old and venerable health-topic. He showed what people, as a rule, do not yet recognise—namely, that a room, as ordinarily built, is a closed box, but for the chimney and the accidental misfitting of doors and window-sashes, which serve as entrances for the air. Again, the ventilation of bedrooms is notoriously neglected; and, when it is considered that in the long hours of sleep we are at the mercy of the atmosphere which pervades the apartment, the necessity for repose amidst pure air is readily enough justified. If Dr. Hinckes Bird's plan were better known, much of the weariness and many of the headaches produced by the non-ventilation of our bedrooms would be avoided. The plan in question is simplicity itself. Raise the lower sash of the window about three or four inches; fill up the open space by a block of wood, so that the lower sash will rest thereon. This being done, it follows that the top of the lower sash rises above the bottom of the upper sash, and a current of air thus flows in between the two sashes without draught or annoyance.

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THE addresses of Professor Gairdner and Dr. Richardson dealt with topics of high sanitary import. The title of Dr. Richardson's discourse, "Felicity as a Sanitary Research," was, in itself, "a happy thought." The happiness which health purchases for us is, in reality, the root of all other modes and forms of felicity. No one can look any question fairly and well in the face who is not a healthy being. Contrariwise, even moderate ill-health is often sufficient to distort our views of life, and to render us unfitted for the free and perfect discharge of all our duties. In man's bargaining for happiness with the powers that be, health must count, in the opinion of all who face the question fairly, as the primary condition for felicity.

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IN addition to the list of contributors to the new volume of HEALTH, whereof the present number is the first, we have to add the names of Dr. Drinkwater, F.C.S., Lecturer on Chemistry in the Edinburgh Medical School, who will contribute a series of papers on that all-important topic, "Food Adulteration." Dr. Riches will also contribute papers on "Hygiene in Relation to Education and Youth."

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THE question of the similarity between the diseases of lower animals and those of men has often been raised. Here is an item which would seem to tell in favour of the identity of an affection in the human subject and in an animal tolerably far removed from man in structure. We know that monkeys suffer from and die of the same diseases which affect humanity, but it might be supposed by many that there was a great gulf betwixt the maladies of man and the equine race. This is not the case. Many diseases of lower life (*e.g.*, farcy and glanders in the horse) are transmissible to man; and the latest piece of information proves the likeness between human and equine troubles to be very close. A horse was affected with severe rheumatism, and in the treatment of this disorder a drug which proves highly beneficial to man—namely, salicylate of soda—was administered in drachm doses every two hours. The result was highly satisfactory. After twenty-four hours of this treatment the horse was much relieved, and in ten days had completely recovered.

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A LITTLE practice is proverbially worth any amount of bare precept; and the vegetarians appear to illustrate the foregoing axiom. The question of the science of diet was recently raised, and Mr. Doremus, an ardent "food-

reformer," offers himself as a subject for experimentation on the side of the vegetarians. In his letter to the *Lancet*, Mr. Doremus offers himself "as a person the medical profession may perform experiments upon for any space of time, from one week upwards." He offers to live, as he has often lived, absolutely without animal food, his confidence being unbounded in the superiority of vegetable over the common dietary. We do not think that, after all, the experiment would be in any way a decisive one. Mr. Doremus is an individual, not a crowd, and of all things it is most dangerous to argue from particulars to universals in the matter of foods. Because A does well on a vegetable dietary is no reason for the assumption that B and C will flourish thereon. The whole matter is one of individual experience, and we cordially commend Dr. Swanwick's remarks in our present number to all interested in the question of foods.

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We learn that the Bavarian Minister of Education has prohibited in the schools under his charge the use of small squares, which are ruled over writing-paper for the purpose of guiding children in the formation of regular characters. The medical authorities who have been consulted by the Bavarian Government in this matter have condemned these rulings; and it might be well for our home authorities—parents and guardians—to see that such devices, if used at all, are abolished in our own educational systems.

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An interesting case in connection with the subject of hydrophobia has recently been reported. A domestic servant, aged 43, whilst visiting at a friend's house, and against the wish of her friend, attempted to soothe a cat which was described as being "mad." The animal bit her on the right wrist, but the occurrence created no alarm at the time, and the patient continued her daily duties until the 22nd ult., when, becoming ill, she was sent under medical advice to hospital. After a short illness she died, according to the medical evidence, of hydrophobia from the cat's bite; and the jury officiating at the inquest gave a verdict accordingly. The newspaper from which the above account is taken contains the report of the death, at Manchester, of a boy six years of age, from the same disease. In the latter case death supervened from the bite of a retriever dog, the injury having been inflicted in August last. It is interesting to note that in the case of the boy some men are reported as having sucked the wound, which was also cauterised by a chemist. In a month's time, however, fatal symptoms appeared, and the boy died from the dreaded disease in great agony. The lesson that excision or cutting out of the wounded part is the only safe treatment seems to be taught by the latter case.

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The Parisians are being duly warned against the injurious effects of the lead contained in the oilcloths used for covering tables, for lining children's carriages, and like purposes. It is said that injury arises from contact of the lead with the skin, and that vinegar allowed to come in contact with the oilcloth would form "sugars" or "acetates" of lead, which are soluble. When we learn that such cloths can be manufactured without the employment of lead, health-laws should be equal to compelling the makers to eliminate lead-preparations from their stock of materials.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc.

SEVENTH PAPER.

In the last article we explained at some length the meaning of that very important law by which the strength of electric currents is determined, known as Ohm's law, and we pointed out that practical consequences of the highest moment might be deduced from it, in regard to the proper arrangement of batteries according to the work which they were required to do. It was shown that the question was mainly one of resistance in the circuit, but that this resistance ought to be considered in two separate parts, the resistance external to the battery and the internal resistance of the battery itself. Where the external resistance is high, as is almost invariably the case in any of the medical applications of electricity, the strength of the current passing is affected in only a very small degree, even by a high internal resistance in the battery; but where the external resistance is low, this latter becomes a very important factor in calculating the strength of the current passing through the circuit. If this current be denoted by C, the external resistance by R, the internal by r, and the electro-motive force (see previous article) by E—then, according to Ohm's law, $C = \frac{E}{R+r}$.

In practice the determination of R is at times somewhat difficult, owing to its being made up of a number of different resistances—wires, electrodes of various kinds, &c., &c. In electrical measurements, the unit of resistance is called the Ohm, and its amount is that offered by a column of pure mercury of a certain length and sectional area. The unit of electro-motive force (E.M.F. or E) is the Volt, and, for practical purposes, may be taken as the E.M.F. of a single cell of Daniell's battery in good working order. As before pointed out, *the size of the cell has no influence whatever* upon its E.M.F.—a point too often quite lost sight of.

Probably the first occasion upon which public attention, and even the attention of electricians, was drawn to the need of measurement when using electricity for medical purposes, was in a paper entitled "On Measurement in the Medical Application of Electricity," by Dr. W. H. Stone, physician to St. Thomas's Hospital, and Dr. W. J. Kilner, read before the Society of Telegraph and Electrical Engineers, on March 9, 1882. Many leading electricians were present, who expressed their strong sense of the great value of Dr. Stone's experiments, and of the great progress which had been made in the medical application of electricity, since it was thus shown to be capable of being so exactly measured, and expressed in terms familiar to electricians.

To describe the way in which the actual measurements of Volts and Ohms are made would be beyond the scope of these articles, since it would involve an amount of technical detail uninteresting, and, perhaps unintelligible, to many readers. It is sufficient to say here that the principles of the instruments employed, galvanometers, voltameters, &c., have been already described in Articles III. and IV. of this series, and that in making the measurements, careful comparisons are always made with standard instruments. One such standard is called a resistance

box, and by slight alterations in it, resistances of from 1 Ohm up to 100,000 Ohms may be measured. For E.M.F., a standard cell of peculiar construction is used, with an E.M.F. of 1·457 Volt. For special kinds of measurements, in which may be included medical ones, it is possible to contrive instruments on which may be read off, with little or no calculation, the amount of current that has passed through a given circuit in a known time, or is passing at a particular moment. Dr. J. A. Fleming (of the Edison Light Company) has paid special attention to the construction of such instruments suitable for medical purposes, so that it will be possible in future for a medical man to prescribe with certainty a given dose of electricity; one is a galvanometer of special construction, and the other a new kind of voltameter, in which the gases evolved from the decomposition of water are collected. The unit of current is called the Ampère—hence, from Ohm's law :—

$$\text{Current in Ampères} = \frac{\text{E.M.F. in Volts}}{\text{Total circuit resistance in Ohms.}}$$

In the course of some experiments with Mr. Pulvermacher's appliances, it appeared that the electro-motive force of his elements, whether chain-bands or chain-batteries, was in each case as nearly as possible one Volt per element, and, as both his bands and chain batteries contain a number of elements connected together in series, their E.M.F. may be obtained with a near approach to accuracy by counting the number of separate elements in each appliance. The same remark would apply to a number of cells of Daniell's battery, joined up in series. The E.M.F. of the medical Leclanché batteries previously alluded to is about 1·5 Volt per cell, and that of a so-called medical battery with zinc and carbon, especially constructed for the use of medical men, was, under the same circumstances, about 1·3 Volt. It should be carefully noted, however, that when the circuit is kept closed for any time, as is usually the case in the medical applications of electricity, the E.M.F. of most batteries falls very rapidly, from the internal polarisation explained in former articles. Daniell's battery is one of the very few which is tolerably free from this defect, and Pulvermacher's chain-bands, &c., are also, in consequence of atmospheric depolarisation (article V.). The internal resistance of a battery varies with its liquid contents, and, other things being equal, depends much upon its size; that of a quart Daniell, for example, being only about 2 Ohms, while that of a Pulvermacher element of the ordinary small size may be as much as 70 or 80 Ohms. As pointed out in the last article, although this would be a serious disadvantage to their use where the external resistance was small, it is a matter of comparatively small moment where they are employed on circuits of high resistance, such as the human body; hence our readers will be quite prepared for the statement that with four or five such tiny elements arranged in series, the writer was able to make perfectly distinct galvanometer (*i.e.* telegraphic) signals through a circuit exceeding in resistance that of an Atlantic cable!

A series of very careful measurements were made with some of those so-called electric belts before alluded to, containing discs or plates of zinc and copper (or other metal) attached to a band of some strong textile fabric, for which it is claimed that an electric current is excited by them when the discs are worn in contact with the skin. As might be expected, the experiments were almost negative in their result; but when the skin was exceedingly moist, and extremely delicate instruments were used, a minute current was detected, amounting to a few hundred-thousandths of an Ampère. Even this minute current was, from the construction of the belt, confined to two or three square inches of the surface of the body.

Allusion has been frequently made in this series of articles to the enormously high resistance of the epidermis, or outer scarf-skin, *in its normal condition*. In that state, as is well known, the cells which compose it are comparatively dry and hard, and in that condition scarcely allow any electricity to pass; but when the spaces between these cells, as well as between the cell-walls themselves, are filled up with water, or, still better, with some liquid whose conducting power is greater than that of water, the current passes readily through the skin. Such a condition, however, is only attained by a somewhat prolonged soaking of the skin in water, or in some liquid conductor as, *e.g.*, salt and water. The following experiment illustrates this. Into the feet of a pair of socks were fastened soles of tinfoil, connected with a constant-current battery and with measuring instruments. The socks having been put on, and the experimenter standing in them, the resistance in this circuit was measured with the dry skin, and found to be 10,300 Ohms. The feet were then put into two separate vessels of salt and water, and the resistance was measured at frequent intervals, with the following results :—

	Min.	Ohms.		Min.	Ohms.
Dry skin	—	10,300	Salt and water.	25	1,470
Salt and water ...	1	4,300	,,	30	1,400
,, ...	5	2,500	,,	35	1,290
,, ...	7	2,100	,,	40	1,250
,, ...	10	1,900	,,	45	1,230
,, ...	15	1,720	,,	50	1,200
,, ...	20	1,540	,,	60	1,190 to 1,200

The practical conclusion from this experiment is that five minutes' immersion in salt and water reduces the skin resistance by more than 75 per cent., and ten minutes' immersion by more than 80 per cent.; or, in other words, that after five minutes' soaking, *four times as much current passed;* and after ten minutes, five times as much, as with a dry skin, with the same battery. Several other experiments of a like character were made on other parts of the body with similar results, all showing the *paramount necessity of thoroughly soaking the skin* before applying the current. Experiments with electrodes of various sizes showed what a great influence the size of the electrodes in contact with the skin had upon the amount of current passing; and also that when they were sufficiently large (a few square inches in surface) the prolonged action of a powerful current did not inflame the skin, nor did it affect its conducting power in any perceptible degree. Small electrodes, however, with a powerful current, inflamed the skin locally, and rendered it a better conductor.

In what has been already said, no mention has been made of the measurement of induced, or rather of alternate, currents. This is a more difficult matter than with continuous currents, and is best done with an electro-dynamometer which depends for its action upon the repulsion between two wires in which currents are flowing in opposite directions. The description of the method, however, would be out of place here.

In the next article of this series, we hope to give our readers some account of Professor McKendrick's lecture on Galvani and Animal Electricity, delivered before the British Association for the Advancement of Science at its Southport meeting, in which lecture the audience was referred for further information upon certain points, to this series of articles in HEALTH.

BARNES'S IMPERMEABLE OPIUM POULTICE, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[ADVT.]

HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT.

By Dr. Andrew Wilson, F.R.S.E.

SIXTH PAPER.

Our papers would be incomplete without a reference to the means adopted for the prevention and cure of hydrophobia, seeing that the previous statements naturally lead up to such a conclusion. We have already indicated a very important duty—not merely on the part of the public at large, but especially on that of the police—at the outset of these remarks—that of distinguishing between a case of true rabies and where an unfortunate dog is suffering from a fit, or, what is a more common case, where a dog pursued and hunted by boys is regarded as mad. If the public have to choose between the alternatives of "mad dog" and "dog in a fit," they will be on the correct side in nine cases out of ten if they adopt the latter opinion. Rabies, after all is said and done, is not a common affection, but is one, nevertheless, which a diseased public imagination will cause to be regarded as alarmingly prevalent. Suppose, however, that a rabid dog has inflicted a wound, the main and important question of "what is best to be done" has to be answered on the spot, and, it may be, by the non-professional bystander. It argues powerfully in favour of the movement for teaching the principles of human physiology in all our schools, that the answer to this question is readily forthcoming from a consideration of the subject of the blood circulation, and of the means to be taken for preventing the diffusion of the virus through the system. The rules to be acted upon in the case before us are those which teach us the right method of treatment in all cases in which a poison has gained admittance to the circulation. Rule first reads thus:—Prevent the diffusion of the poison through mechanical and other means. All surgeons agree in recommending immediate *excision*, *i.e.* the cutting out of the bitten part, as the safest procedure. To this rule there can be no difficulty or hesitation in assenting, provided there are forthcoming the surgeon and his anæsthetics. By the use of the latter all pain is avoided, and the treatment thus indicated, apart from the question of pain, is that considered the most effective by all authorities. Sir Thomas Watson has a very striking and forcible passage regarding the treatment of the bite of a rabid dog:—"For my own part," says Sir Thomas, "if I had received a bite from a decidedly rabid animal upon my arm or leg, and the bite was such that the whole wound could not be cut out or thoroughly cauterised, my reason would teach me to desire, and I hope I should have fortitude enough to endure, amputation of the limb above the place of the injury."

But suppose medical aid is not forthcoming, what is then to be done by the bystander? The answer is, tie a bandage tightly *above* the wound, for the purpose of arresting the venous circulation, which is, of course, tending to diffuse the poison through the circulation. The poison should then be either destroyed by cauterisation of the wound, or be removed therefrom by suction. Remembering, however, the possible risk of infection through the mucous membrane, the cupping-glass should be preferred as a means of suction. Next, try to wash away, as soon after the infliction of the wound as possible, the poisonous material. Probably the best method of attaining the latter result is that of placing the wounded part under a strong douche or stream of cold or tepid water, and of allowing the water to play with some degree of force on the wounded surface for at least an hour or longer. Thereafter, according to Mr. Youatt's belief, the safety of the sufferer would be secured by having the wounds well cauterised with nitrate of silver (lunar caustic), a substance which, in his own hands, proved eminently successful in the treatment of dog-bites. There could be no objection in the treatment of dog-bite to using a red-hot coal or iron for the purpose of cauterising the wound and destroying the poison. The actual cautery, it may be added, is by no means so painful a procedure as is commonly supposed. The common-sense rules of first and speedily adopting measures calculated to eliminate the poison from the seat of the wound, of arresting its diffusion through the blood-vessels, and thereafter of securing the further immunity of the wounded part by destroying as much of the surrounding tissues as possible should be borne clearly in mind. Curare, the famous arrow-poison, has been employed with success in one case, and high authorities agree in recommending the use of the Turkish bath by way of assisting in the elimination of the poison. But the chief matter which concerns the public at large is that of the means to be used on the spot, the after-treatment being a matter for the especial consideration of the physician.

The conclusions regarding hydrophobia to which these remarks lead, may be summed up in the statements, firstly that it is an affection respecting which much popular misconception exists, and that in consequence a large amount of unnecessary fear and alarm prevail regarding its occurrence; secondly, that hydrophobia is in ordinary cases a curable affection, provided prompt measures are used for its cure; thirdly, that the phenomena of the disease point to its clearly specific nature, and to its being derived in man exclusively from the diseased secretions of rabid dogs and of allied animals; and, lastly, that the best means for ensuring the public safety consist in the widespread knowledge of the nature of the disease and of the measures to be adopted for the prevention and cure of the disorder.

A highly important piece of final advice is that which enforces the wisdom of seeing that a dog, suspected of being rabid, and which has bitten a person, *should not be destroyed*, but should be tied up and carefully watched. If the dog is in good health and has simply bitten the person through anger, the preservation of the animal and its subsequent health will show that the case was not one of rabies, and will save the bitten person many continuous pangs of dread and fear. If, on the contrary, the dog does prove to be rabid, its seclusion will most clearly demonstrate the fact, and it can then be mercifully destroyed, whilst the patient can be attended to, and remedial measures and precautions duly observed.

"Knowledge is power" in truth, in the presence of the sudden danger which a rabid dog or a serpent's tooth, or indeed any other untoward accident, may bring. The knowledge which points the way of safety can in no case be regarded as exaggerating an evil, even although such knowledge deals with details which, to non-professional readers, may appear unpleasant, and which usually fall to be considered by the physician and surgeon alone. Whilst the diffusion of technical information as a means of averting disease and death may be regarded as exemplifying "saving knowledge" of the most valuable kind.

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

REMARKS ON THE VEGETARIAN CONTROVERSY.

By E. M. Swanwick, M.R.C.S.E.

In these days, when everybody is "enquiring within" upon everything, and matters touching on health are much to the fore, it would appear not inopportune to offer a few remarks on the subject of vegetarianism; and to discuss the *pros* and *cons* for the general adoption of a vegetarian diet, as recommended by an increasing number of the inhabitants of this country.

In a single short article it would be impossible to dive deeply into the sea of controversy surging around us; yet the leading features of the surface may be a little more than enumerated.

The primary point of the vegetarian doctrine is, that in the comparative study of the anatomy of man and of different animals we find man allied with the fruit-eating animals by the shape of the teeth, which—as in the apes—have rounded cusps on the grinders; that we have no sharp, saw-like teeth, as in the carnivora. By argument from the teeth alone we should say, then, that flesh was not the food best adapted for us to employ as our sole diet. This view is confirmed by experiments in physiology.

Granting that an average man in this country excretes 4,000 grains of carbon daily, and 300 grains of nitrogen, and that he assimilates sufficient meat to supply all the carbon excreted, he would at the same time assimilate considerably more nitrogen than his system required, under ordinary circumstances, and in so doing would throw injuriously hard work on his nitrogen-excreting apparatus—the kidneys. There are mixtures of vegetable foods which would give the exact proportions of carbon and nitrogen required for the support of the system, but the energy required to assimilate the protoplasm of vegetables to that of man is considerably greater than that required to assimilate the protoplasm of animals. This is indicated by the great length of intestine furnished to purely vegetable feeders. In the comparative ease of digestion of animal and vegetable albumen, in the form of foods, an interesting experiment may be tried. Take half-a-pound of lean meat, boil it so as to have as little loss as possible, and eat it for dinner with a little white bread to form mixed food. Next day take six and a-half ounces of beans, and boil them; next day seven ounces of peas. These require no accompaniment of bread. Each of the above represents two ounces of albumen. The after sensations will tolerably well express the quality of the digestion and assimilation. As we can more rapidly convert the potential energy (energy of chemical separation) of meat into our own kinetic energy (or energy of chemical combination), we say that meat is a more stimulating diet than vegetables. If a man is not doing sufficient work to expend the amount of energy necessary for the maintenance of health, he would probably be stronger and in better condition on a vegetarian diet. If, however, he requires all his physical energies for his occupation, it is an economy to substitute the more easily assimilable meat for part of the nitrogenous vegetable diet, if he is able to digest it more easily. The nitrogenous vegetables are with most very hard of digestion, and largely pass through the alimentary canal undigested.

In comparison with the apes, our salivary glands are not so fully developed, which points to a less proportion of vegetable food being adapted to our wants. Yet even the apes eat some animal food when they can catch small birds and insects.

Again, the stomach of man is not shaped like the true herbivorous stomach, nor is it of quite the texture of the carnivorous stomach. In the apes "the stomach is less elongated transversely and less generally constricted in the middle than in man; but the cardiac cæcum is most developed in the former, and especially in the lowest tribes." (Prof. R. E. Grant, "Comparative Anatomy.") The herbivorous animal which possesses a stomach most nearly approaching in shape to that of man is probably the horse. Here, however, the end on the left side of the gullet (the cardiac cæcum) is very much larger in proportion than the human, as in man it is larger than in the cat-tribe of carnivora. In the ruminating herbivora the stomach is compound, and the food takes a double journey from the mouth, thus practically lengthening the already enormously long alimentary canal. Again, in purely vegetable feeders we find an extremely capacious, convoluted colon, or large intestine, continued past the juncture of the small with the large, in a more or less voluminous cæcum, varying according to the proportion of herbaceous material which the animal requires to ingest. Thus in the horse the large bowel is about twenty-three feet long—say three times the length of the animal without its legs; whereas in man his five and a-half or six feet of large intestine is not more than twice as long as his body and head, and has a cæcum of the diminutive length of two and a-half inches. If, then, we are to judge from the comparative anatomy of the digestive organs, we should have to say that man is as distinctly non-herbivorous as he is non-carnivorous, that he tends more to the carnivora side of the scale than the apes do, and that his digestive system seems to be well adapted to an omnivorous diet. His jaws have not the massive muscles which carnivora and apes employ in the mastication of their food, and his food is probably not intended to be so hard. He is a cooking animal by nature, and his grain need not be eaten raw, nor is he required to crack bones. He alone, of all animals, knows how to light a fire. He puts on warm clothes, and eats meat, in cold climate; he indulges sparingly in meat, as a rule, and clothes lightly, or not at all, in warm climates.

Even did the structure of man's alimentary canal not indicate a mixed diet, we could not say from structure alone that any particular kind of food was pointed to by nature. For we find other animals very widely distributed which employ a diet differing with the various climates they inhabit. Thus the polar bear is exclusively carnivorous, the European omnivorous, and the tropical lives chiefly on roots, fruits, honey, insects, with an occasional flesh meal when it can obtain it. Yet the structure of the teeth and the other parts of the alimentary system are alike in all, and these indicate omnivorous habits. On careful examination we see, then, that the anatomical argument of the vegetarians falls to the ground. What can be said of the argument from the chemical analysis of food-stuffs! We have seen that all foods are not equally digestible, nor are they equally assimilable. Chemical analysis of food-stuffs is apt to lead the unwary very much astray. From the quantities of carbon and nitrogen given above as secreted daily by an average man, by chemical analysis we

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

might conclude that a little over 4,000 grains of charcoal a day would satisfy the carbon, and 857 grains of nitrate of ammonia would supply the nitrogen required. I have so often seen the argument from chemical analysis held up as a proof of nutritive value, especially Liebig's analyses, that I could not withhold an extreme instance. Also in a book on vegetarianism occur the words, "We find nitrogen supplied in nearly all kinds of vegetation; and, in case of accidental scarcity in the vegetable kingdom, in the atmosphere which surrounds us," totally ignoring the fact of how little of the nitrogenous material of vegetables is assimilated, and that none of the nitrogen contained in the air, as far as we know, takes any part in our nourishment. Again, gelatin would seem by analysis to be a good nitrogenous food. Dogs will *starve* on pure gelatin. Add a teaspoonful of good meat gravy to each meal of gelatin, and they will be well nourished.

As a general rule, the meat-eater lives more rapidly than the vegetarian, is much more likely to over-feed and give his excretory apparatus too much to do, and so far is more liable to disease. This is a matter he should take into consideration, for there is no doubt that most of us eat too much meat for continuance of health, especially so if the animal has not been carefully fed and nurtured, and properly killed, with sufficient loss of blood. It is here probably, and in insufficient or improper cooking and keeping, that danger from ptomaines* arises. These are probably most dangerous in badly killed and cooked meats on the second, third, and fourth days.

To conclude: Man is naturally a *tropical*, fruit, and root-eating animal, possibly also grain-eating; but his organs are arranged for living on any part of the earth's surface, keeping up his animal heat on animal fats in the north, supplying material for perspiration by consuming vegetable oils in the warm climates. Nature does not provide vegetables in large quantities in arctic climates, but supplies blubber. In tropical countries fruits abound. The whole question, then, is one of economy of energy, for each individual to solve for himself by experience.

WATER AND TEA *V.* ALCOHOL.

A singular match recently took place in the harvest field as to whether a man could work better on water or alcohol. The contest, which was under the auspices of the Church of England Temperance Society, resulted in favour of the man who took beer. Thus proving, if any proof were needed, that alcohol is a true food, as was affirmed by no less an authority than the late Dr. Druitt, and established beyond a doubt by Dr. Parkes in his experiments on a young healthy soldier—small quantities of alcohol were found to increase the appetite and rouse the action of the heart and capillary vessels, accelerating the circulation; but in large quantities, as when narcotism began, the symptoms were distressing. Another point in favour of a moderate allowance of alcohol—especially when one is suffering from *ennui*—is, that it undoubtedly "gladdeneth the heart of man" as is affirmed on the highest authority. One, therefore, feels almost tempted to say with Shakespeare, "good wine is a good familiar creature, if it be well used; exclaim no more against it." It appears that the well-known pedestrian, Mr. E. Payn Weston, is about to undertake a walking tour through England and Wales, with a view, he asserts, to demonstrate the superiority of tea over beer and alcoholic drinks in general during periods of prolonged muscular exertion. In face of such crushing evidence to the contrary, nothing Mr. Weston can say or do will in the slightest degree tend to shake one's faith in physiological facts — that malt liquor, not only from the fact of the alcohol it contains—from 5 to 15 per cent.—but also from the large quantity of malt extract found in it, ranks consequently as a "flesh former," hence it is frequently prescribed (as was recently pointed out in our columns by Dr. Philip Foster) in convalescence from wasting disease, extreme thinness, feeble digestion, or where there is difficulty in maintaining the animal heat. Tea, as was pointed out by the late Dr. Edward Smith, F.R.S., is hurtful in the absence of food, after a long fast (as at breakfast), to the poor and ill-fed, the spare, and the young. *It is not adapted to sustain exertion*, to prison dietaries, to low temperatures, or to hot climates, when the appetite is defective and the skin active, or to those who perspire too freely, neither should it be taken with our principal meal. It is useful to the corpulent, the over-fed, after a full meal at the end of the day, when the food has accumulated in the system, when digestion and other vital changes proceed slowly; for the sedentary, for those who do not perspire freely, and for those who eat much starchy food.

Mr. Weston may profit by following the advice contained in 1 Timothy, v. 23: "Drink no longer water, but use a little wine for thy stomach's sake."

* Cadaveric alkaloids; alkaloids which form in a dead animal body.

Freckles.—Those who are troubled with freckles should know that keeping the skin moist with a lotion of hyposulphite of soda, of the strength of half a drachm to the ounce of water, is highly useful in removing these disfigurations. Another lotion, for outward use only, (to be carefully used from its poisonous nature) is composed of corrosive sublimate, three grains; sal ammoniac, two drachms; tincture of benzoin, two drachms; and rose-water to make up eight ounces.

Much has been said and written of late years on the importance of having sanitary inspectors of schools, and every sanitarian recognises it. It only need be added in this place that the inspection should begin with the site; and the inspector should possess such qualifications, and be backed by such authority, as would secure the best practical conditions of site, construction, and fittings; and he should be so constant in the exercise of his office as to be able to recognise and prohibit at the outset any and all conditions in conflict with the health of the teachers or pupils. But all that has been or can be said in favour of such service for public schools is of equal force in relation to other public institutions, and to many private ones—if these may be made to include all open to public patronage—*all* educational institutions (private as well as public), churches, assembly halls, court-rooms, jails, hospitals, asylums, charity institutions, hotels, lodging-houses, and tenement houses.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR MEDICAL NOTEBOOK.

EASY HINTS FOR THE TREATMENT OF COMMON COMPLAINTS.

The Treatment of Stye.—Recent medical experience in the treatment of that familiar affection the common stye, affords us information worth remembrance. The plan of treatment recommended is to dispense with hot fomentations, &c., and to apply locally tincture of iodine to the lids, care being taken to keep them apart until dry. A few applications in the twenty-four hours is often sufficient to arrest the development of the stye.

In the treatment of **Persistent Cold in the Head, or Nasal Catarrh,** when there is much discharge from the nasal passages, we are advised to use the spray-producer with the following solution:—℞ Carbolic acid, one grain; glycerine two drachms; water, two ounces. After the passages are clean, a small quantity of Vaseline is melted in the bowl of the spray-producer, and two to five drops of the pinus canadensis mixture added. The mixture consists of:—℞ Pinus canadensis, fifteen grains; glycerine, half an ounce; carbolic acid, half a grain; water, an ounce and a-half. This is to be applied by the spray to every part.

Castor Oil and Glycerine as a Purgative.—The value of castor oil as a family medicine is undoubted. Referring to its use, Dr. Soper says:—"After many months' experience, I now feel justified in bringing to your notice the great advantages of a combination of the above two drugs in equal proportions to act as a purgative. Glycerine has great therapeutic value, especially in its solvent properties, and this combination renders it especially valuable. In regard to castor oil, I think a great mistake has been made in the largeness of dose administered, and in this mixture only half-a-teaspoonful is required combined with an equal bulk of glycerine. In all cases of chronic constipation, piles, &c., it has proved most useful. I have also given half-teaspoonful doses in the early stages of bronchitis, which seem to promote exudation from the tubes, and is certainly expectorant. My great difficulty hitherto has been the obstinacy with which the mixture becomes a mixture, as it can only be made by placing the bottle in hot water and violently agitating."

Parsley as a Medicine.—Dr. Stanislas Martin, after observing that the use of mineral waters interrupted the secretion of milk, states that, as an external application, parsley-leaves act most efficaciously in dispersing it, and that they were used for this purpose by the Roman matrons of old. The breasts should be covered with freshly plucked leaves, and these should be renewed several times a day as fast as they begin to fade. The dispersion of the milk soon takes place. Dr. Dujardin-Beaumetz confirms Dr. Martin's statement, and adds that in Asia Minor parsley in the form of large cataplasms is used by the women as an ordinary domestic remedy.

Remedies for Severe Itching.—This troublesome affection may be cured by the use of the following (taken from a French journal):—Milk of almonds, 500 grammes; corrosive sublimate, 0·25 grammes; ammonium chloride, 0·25 grammes. Or, glycerine of starch, 60 grammes; bismuth subnitrate, 5 grammes; zinc oxide, 5 grammes. Or, infusion of mallow, 1 litre; cherry-laurel water (filtered), 50 grammes; borax, 10 grammes.

Milk and Eggs in Mind Troubles.—Dr. Clouston, in the Annual Report of the Edinburgh Royal Asylum for 1882, draws attention to the good effects produced by the liberal use of milk and eggs in the case of nervous patients. He gives to such patients as many as a dozen eggs, and as much as six or seven pints of milk a day. When this form of treatment is associated with plenty of walking exercise in the open air, a great increase of weight often takes place. "A gain," he says, "of two or three stone is quite common, and usually there is an immense advance along with this in nervous stability, in contentment and in self-control, even if a complete recovery does not take place." "The greater my experience becomes," writes Dr. Clouston, "I tend more to substitute milk for stimulants. I don't undervalue the latter in suitable cases; but in the very acute cases, both of depression and maniacal exaltation, where the disordered working of the brain tends rapidly to exhaust the strength, I rely more and more on milk and eggs made into liquid custards. One such case this year got eight pints of milk and sixteen eggs every day for three months, and under this treatment recovered. I question whether he would have done so under any other. He was almost dead on admission, acutely delirious, absolutely sleepless, and very nearly pulseless. It was a hand-to-hand fight between the acute disease in his brain and his general vitality. If his stomach could not have digested and his body assimilated enough suitable nourishment, or if he could not have been taken out freely into the open air, he must have died. But to-day he is fulfilling the duties of his position as well as he ever did in his life. All acute mental diseases, like most nervous diseases, tend to thinness of body, and therefore all foods, and all medicines, and all treatments that fatten, are good. To my assistants, and nurses, and patients, I preach the gospel of fatness as the great antidote to the exhausting tendencies of the disease we have to treat, and it would be well if all people of nervous constitution would obey this gospel."

The Medical Uses of Figs.—Professor Bouchut speaks of some experiments he has made, tending to show that the milky juice of the fig-tree possesses a digestive power. He also observed that when some of this preparation was mixed with animal tissue, it preserved it from decay for a long time. This fact, in connection with Professor Billroth's experience in a case of cancer, which was so excessively foul smelling that all his deodorisers failed, but which on applying a poultice made of dried figs cooked in milk was entirely freed from odour, gives an importance to this homely remedy.

The Diamond.—The diamond is pure carbon, or charcoal crystallised. It is among the rarest of all known substances, and carbon is among the most abundant. We can have a roomful of pure carbon for sixpence, but a bit of pure crystallised carbon the size of half a walnut is worth many thousand pounds. A diamond requires great heat to burn it, but when it does burn, it consumes utterly. Its whole substance changes into that kind of gas which is pumped into soda-water, and is produced naturally in champagne.

Health Lectures to Ladies.—In connection with the Liverpool Science and Art Classes there will meet, during the winter session, special classes for ladies for the study of Hygiene and Animal Physiology. These classes will be conducted by Miss Helen Fryer, who, on Monday last, in the Lecture Hall of the Philharmonic-buildings, 1, Falkner-street, delivered a lecture introductory to both courses, and on Monday next the first lecture of each course will be given.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HEALTH AND LOCALITY.

Mr. W. Eassie, C.E, in a recent address delivered before the Sanitary Institute of Great Britain, said:—It is singular, taking England as an example, that the distribution of certain diseases largely depends upon the absence or otherwise of valleys and rivers, along which the winds can sweep without interruption; in other words, upon the physical conformation of our island as it was left at the end of the last geological epoch, when it became fit for the residence of man. I will mention one or two instances, and the lessons which they teach would amount to this, that before making choice of a locality for people subject to certain ailments, it is wise to take its geological structure into consideration. Mr. Alfred Haviland says, after years of study on this matter, that "those coastal counties most exposed to the prevailing winds are most free from obstructions to their full operations, have the least mortality"—due to heart disease, "whereas, those coastal counties, such as those along the south coast, which have barrier-like rocks and other characters which tend to interfere with the full sweep of the sea winds, are those which have a high mortality." Where the precipitous and wall-like rocks are intersected by every variety of sea inlet opening into wide valleys, through which the winds can scour along, there is a lower mortality. He also remarks that, "coincident with the lowest exposure to the sea, as in the Midland Counties, is the highest mortality of heart disease in those counties, and the lowest amount of mortality is coincident with the greatest amount of exposure. The counties which lie immediately between these extremes have also an intermediate amount of death-rate." His conclusions have been worked out with the extremest care, accompanied by maps. As an example, it may be instanced, that the East Yorkshire group of counties, which is bounded by a precipitous coast of oolite and chalk cliffs, say from Whitby to Bridlington Bay, and has no inlets, with an inland-directed water-shed, has a high mortality.

The low coast of sea-board, between Bridlington and the Isle of Sheppey, differently situated in respect of offering no check to the winds, has a very low mortality. These conclusions are well worthy of attention and of serious moment, seeing that the mortality from heart disease and dropsy amounts to more than one-seventeenth part of the whole mortality from all causes. London, as a division, has a low mortality, and coincident with this it is traversed by the great sea inlet, the Thames, with a twice a-day average rise of the tide between 16 and 20 feet.

About fifteen years ago Dr. Buchanan examined three of the southern counties of England with regard to the distribution of phthisis or consumption, and, without going into the details of his report, I will give his conclusions, which are as follows:—

Within the counties of Surrey, Kent, and Sussex there is, broadly speaking, less phthisis among populations living on porous soils than among populations living on impervious soils.

Within the same counties there is less phthisis among populations living on high-lying pervious soils than among populations living on low-lying pervious soils.

Within the same counties there is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.

The whole of the foregoing conclusions combined into one—which may now be affirmed generally, and not only of particular districts—that wetness of soil is a cause of phthisis to the population living upon it.

Mr. Haviland, a few years ago, writing upon phthisis in females, says that "the warm, fertile, ferruginous, red sandstone tracts of country are remarkable for forming the sites of the most extensive series of low mortality groups throughout England. The high elevated ridges of non-ferruginous and unfertile carboniferous limestone and coal, and the elevated, hard, unfertile, non-ferruginous Silurian forms the sites of the most extensive series of high mortality groups."

Sudden Changes in the Colour of the Hair and Skin.—At a recent meeting of the Academy of Medicine of Dublin, Dr. W. J. Smyly read a paper on sudden change in the colour of the hair of an infant. The child was perfectly healthy, to all appearance, until he was four months old. He was then attacked with acute inflammation, followed by suppuration in the left temporal bone, with high fever and profuse perspiration, and paralysis of the left side of the face. One morning (Nov. 1 last), the hair on the right side of the head was discovered to have undergone a remarkable change from its original mouse-coloured hue to a reddish-yellow. The right eyebrow was similarly affected, and the skin of these parts—as well as that of the right hand—was bright yellow. The pillow also was saturated with a reddish-yellow perspiration. The suggestion offered as to the possible cause of this remarkable change in the colour of the hair was that the perspiration, which was of a peculiar colour, and probably of abnormal chemical constitution, not only destroyed the original pigment, but also dyed the hair a reddish-yellow colour. Dr. Banks referred to a case which had come under his notice—that of a young woman. Half of the lashes of one of her eyes became snow-white, which she attributed to the annoyance suffered from the persistent gaze of a "wall-eyed" admirer who had white lashes on the defective eye. Dr. Walter Smith related the case of a boy in whom the skin of the lobes of both ears, and that of the back of the neck, was of a sulphur-yellow, the downy hair being of a bright yellow. The hair of the head was brown. The yellow colouring could be readily removed by a moistened cloth, but no washing could decolourise the skin; nor did ether or chloroform produce any effect. He exhibited specimens of the hair. He also referred to a case of red discoloration recorded by Wilson. After relating the case described by Darwin, in which the hair of a criminal, brought out for execution, turned white in the presence of the spectators, he said he could not agree with Dr. Smyly in ascribing bleaching properties to the perspiration, but did not give any explanation in lieu of it.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street, London, W.—[Advt.]

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

RIDING, BICYCLING, TRICYCLING, AND LAWN-TENNIS.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecture on Anatomy in the Edinburgh Medical School.*)

SECOND PAPER.

Riding on horse-back, for those who are able to afford it, is in many ways a most valuable exercise. It is especially suited for those who are unable to walk far or fast. The effort to maintain the seat and preserve the balance of the body affords a useful and pleasant exercise, while the rapid change of scene and the effort necessary to guide the horse, afford a mental diversion which has already been alluded to as very important. The quick passage through the air is most exhilarating, while the amount of necessary jolting is said to be of much benefit to a sluggish liver.

In bicycling and tricycling we have forms of exercise which are similar to that of riding on horseback, although requiring a greater effort of the legs. The machines now used are light and well-made, and almost incredibly long distances may be covered on them in very short spaces of time. Of the two, bicycles are the faster and easier, especially for long distances, but there is a certain element of danger connected with them, and a greater amount of activity is required in mounting and dismounting, which makes them less available for middle-aged or delicate persons than for the young and active. On the other hand, the art of riding a tricycle is easily learned, and the machines are now so beautifully and carefully made in every detail of their mechanism that almost any one may take to them with pleasure and benefit. Many for whom horse exercise would be suited but who are unable to afford the luxury of a horse, may be able to buy a tricycle, and get as much benefit from it as from the living and more expensive steed. If any one wishes to ride a bicycle, he must be active, and if he is to avoid the risks of a fall must always ride with care and be especially circumspect when coming down hill. There is no evidence to show that ruptures or other injuries are apt to be caused by bicycle or tricycle riding more than by any other form of exercise; the rule applies here, as it does elsewhere, to do things in moderation and avoid undue violence and over-fatigue. Under our next head, *i.e.* "games involving running," most of the commoner games of children may be included. It is unnecessary to enumerate them, as our present purpose is merely to point out that they chiefly involve the use of the lower limbs. They are, however, admirably suited to children and girls, since they cannot be said to require any violence, and since they are entered into with great glee and are usually accompanied with abundance of shouting and laughter, thus increasing the action of the lungs in addition to what is required by the muscular exertion itself. If any word of caution has to be given it is to prevent cold being taken after these games. They are often played in the evening, and there is a great temptation for the players to sit down in the chill and damp air after having been overheated, which may prove most dangerous. Care should, therefore, be taken to prevent the risk of a chill after these games, and if possible the clothes should be changed to avoid the necessity of sitting in garments damp with perspiration.

As regards golf, that prince of games for men and boys, we can only speak of it with unqualified praise. No game that we know of can be carried on so late in life, and with such good results, and none brings with it a greater keenness of interest, enticing us on as it does from point to point over the fresh and breezy links, and giving us more and more delight each time we play. The exertion of swinging the club brings out the muscles of the whole body, while the attention and care required for each stroke, and the zest of a well contested match, give us the very best form of exercise and recreation, for those whose life during the greater part of the year is necessarily sedentary. Few are able to realise the intense interest with which golf players follow their game, until they have tried it for themselves, and then they find that what seems a very meaningless striking of a ball with a stick along the grass, is one of the most captivating and enjoyable games they could have imagined. Golf may be taken up at any age, but it is always better to begin young, and no youngster who can possibly get an opportunity should ever miss the chance of learning, even though he should not play regularly for years after. Wherever the land along the shore grows that short thick turf which is necessary for the game, and the ground is promising for a "links," it should be set aside as a national property, and be preserved with jealous care.

To conclude this brief sketch of the milder forms of exercise, we may say a word or two on lawn-tennis, and contrast it in passing with that almost extinct game of croquet. The two may be taken together because, although differing considerably as a means of exercise, they are very similar in the place they hold (or held in the case of croquet) in the social scale, if we may so express it. Both are available on level lawns all over the world, can be equally played by ladies as well as gentlemen, and are or have been made the opportunity for large social gatherings, under the name of croquet parties a few years ago, and lawn-tennis parties now-a-days. In lawn-tennis there are facilities for active exertion involving the legs, trunk, and right arm, and a constant and varying interest. In croquet, on the other hand, the exertion can never be said to be active, and is generally quite the reverse, the stooping position required being also bad for the chest, while the interest is for the most part intermittent, and is often anything but pleasurable. We do not wish to heap too much discredit on a game which is now nearly extinct, but in our experience and in that of many friends with whom we have compared notes, there is no game which is so provoking as croquet, none in which the effort to preserve the Christian graces is so much required, or so often without effect. What may be said for it is, that it affords a widely-available out-door amusement for both ladies and gentlemen, especially for those who are not strong enough for lawn-tennis, and for these reasons it may revive again to a certain extent, but never, we trust, to its former position as almost the only available lawn amusement for ladies and gentlemen together. One aspect of croquet we must not omit before we leave it, and that is the excellence of its matrimonial facilities. It not only brings ladies and gentlemen together, but by its inertness it gives them ample opportunities for conversation, while it affords, moreover, a most admirable test of sweetness and good temper.

Lawn-tennis is so well known and appreciated that it is

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

more in the way of caution than of praise that anything requires to be said here. Unfortunately in many cases it is only too popular, and young people are apt to bring it into discredit by injuring themselves through playing it to excess. When we hear of the "lawn-tennis elbow," or "lawn-tennis knee," we must not suppose that there is anything specifically inherent in the game to produce these results. What it means is, that by the unequal and excessive use of any joint or muscle we may set up mischief in it, and when lawn-tennis is played to excess the joints and muscles most concerned are apt to suffer. Two or three hours per day at the outside ought to be enough to satisfy most people, but five, six, or seven hours, especially for ladies, is certainly too much. Since the right arm only is generally employed, efforts should be made to exercise the left arm and left side of the body to counteract this one-sided tendency, and the greatest care should be taken to avoid playing if any of the joints are strained, as the rapid turns and quick movements are apt to cause sprains and wrenches if they should have any tendency to give way. Those who have not been accustomed to active exercise should begin gradually. If they do, and if they play the game within reasonable limits, and supplement it with walking or riding, or some other form of exercise, they will find that lawn-tennis is one of the most valuable as well as the most fashionable of our modern forms of physical exercise.

(To be continued.)

Children's Minds.—In October, 1869, the Pedagogical Society of Berlin inquired by circular how many of the children who entered the primary classes had seen certain common animals, insects, and plants, public buildings, museums, parks, suburban pleasure-resorts, &c. Other questions related to the home, farm, natural history, God, Christ, prayer, and many such subjects. Profiting by this experiment, Mr. G. Stanley Hall, last September, undertook to ascertain the contents of children's minds on entering the Boston primary schools. Much pains was taken to collate such questions as would yield the best results, and to utilise the most skilful kindergarten teachers in putting the questions. Even with all these aids and cautions the results were often very amusing. Two tables are given by Mr. Hall, setting forth the words, and the percentage of children ignorant of them. The high rate of ignorance is absolutely astonishing. About ninety per cent. did not know where their ribs were situated, and seventy-five per cent. could not describe an island. Furthermore, those who knew certain facts—for instance, that cheese comes from the cow—apprehended them in the loosest manner, thinking, perhaps, that the cheese is squeezed from the cow as the juice from a lemon. The same ignorance or indefiniteness of knowledge marked the opinions of the majority of the children concerning natural phenomena, natural history, and physical experiments of the simplest kind. The author comes to the following conclusions :—(1) Children know next to nothing valuable at the outset of their school life ; (2) children can best be prepared for school by familiarising them with objects ; (3) teachers should carefully explore children's minds ; (4) the concepts that are most common in the children of a given locality are the earliest to be acquired, while the rarer ones are later.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

The Drainage of a West-end Mansion.—In the immediate neighbourhood of Pall-Mall we recently visited the basement of a mansion belonging to a prominent member of the House of Peers, who had reason to suspect that the drainage was not in a satisfactory condition. To judge from external appearance, the house was in good order, and resembled in every respect hundreds of other similar residences. On removing the floor, however, it soon became apparent that the whole basement was honeycombed with elongated cesspools. A number of large brick drains ran in all directions, divided here and there, as a protection against sewer gas, by dip stone traps. These consisted of square holes about a yard deep and nearly as wide. In the centre a flagstone was inserted that reached down nearly to the bottom, thus forming a sort of syphon-trap ; but, considering that about a cubic yard of sewage had to accumulate in this receptacle before any could flow out of the trap, the water had time to deposit the heavier particles held in suspension, and the traps gradually became blocked with hard, black sewage matter. The flow thus checked, the numerous brick drains, some two feet in diameter, also became choked up. Some of them were opened in our presence. They were full up to the top with black soil, that threw up poisonous gases on being touched with a spade. Several cartloads of this foul accumulation had to be removed, and all this from the basement of one single house and its adjoining stables. The largest drain went direct into the sewer without trap or any sort of interception, and brought back the sewer gas to the servants' hall by means of an aperture under the floor, where a sink-pipe was improperly fitted into the drains. A branch drain under the kitchen floor was leaking. In an ill-ventilated scullery, next to the kitchen, there was a sort of cesspool under the sink, two yards square and one deep, full of greasy, thick, and putrid deposit. The fall of the drain passing under the kitchen sink inclined in the wrong direction, so that the entire drains had to be filled before any liquid could get away into the sewer. In the larder there was another dip stone trap, full of solid deposit, that gave off dangerous effluvium through two ineffectual bell-traps covering the mouths of openings in the floor. Altogether the greatest ingenuity seems to have been displayed in laying down a needlessly-complicated network of drains, so contrived that the solids could easily accumulate in them, and that sewer gas could have every opportunity of pervading the whole house in a most insidious and complete manner. The owner of this mansion may be congratulated on having discovered the great danger to which all its inhabitants were exposed, and we only wish that these facts might be more generally known, for there are hundreds of other houses in an equally bad condition.—*Lancet.*

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Disinfection of Rags.—An agitation, based no doubt on the recent issue of the Government orders regulating the importation of rags from Egypt, has been set on foot for extending the provisions of such orders, or something like them, to rags of all kinds coming from foreign countries. Thus the Hull Sanitary Committee confirmed, at their last meeting, a report signed by the chairman, the

town clerk, the medical officer of health, and the borough engineer, which stated that, although few rags from Egypt find their way to Hull, large numbers of bales from other other countries, *e.g.*, Denmark, Germany, Belgium, Norway, and France, are received there, and that the authorities have no power to prevent this importation. The committee recommended that ample powers ahould be conferred on local authorities to prevent possible introduction of disease by cargoes capable of conveying infection. Sir Charles Dilke, replying to Sir Stafford Northcote on the 15th said that the question of restricting the importation of rags was under consideration; and, meanwhile, the Local Government Board have issued a memorandum by their medical officer, Dr. Buchanan, expository of the recent orders as to Egyptian rags, and Dr. Buchanan points out the importance of some place being ready for the first deposit of rags which may have to be landed. The health officer will have to be guided by his own inquiries in the time of collection and characters of the rags, whether any bale shall undergo disinfection or be destroyed. As regards disinfection, the following measures are suggested. 1. The bale should be exposed to heat in such a way that every article in it shall attain a temperature of 250° Fahr., and be kept at that temperature for two hours. The arrangement which gives greatest penetration of heat is the use of high pressure steam, more especially if the pressure be from time to time relaxed and reapplied so as to displace air. By this means it is possible to avoid so detailed a spreading out of the rags as would be requisite for efficiency with other processes. 2. The bale may be opened out and the whole of its contents be exposed to disinfection by a liquid agent; and this may either be water sustained for a while at boiling heat, or water containing in every four gallons one pint of the common clear solution of chloride of lime. In such chlorinated water, the rags should soak for some hours.—*British Medical Journal.*

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Breathing-space in Nurseries.—A room 15 ft. square and 9 ft. high affords ample initial cubic space for a nurse and two children; with good and careful management, a nurse, infant, and two other young children have occupied a bedroom of this size without detriment to health. No useless articles of furniture or of drapery were allowed entrance; both a dressing-room and a bath-room were close at hand, care was taken to keep the air of the room pure, no open vessels were allowed to remain, the door, never quite closed, admitted light and air from the passage, the two windows were partly open on the summer nights, and the fire always lighted before bed-time in the winter. Children from seven to nine or ten years of age may have separate bedrooms, and after that age a separate dormitory for each is requisite. A space of 14 ft. or 15 ft. by 8 ft. or 9 ft. wide permits of a bed 4 ft. wide to be placed between the door and the wall, and a fireplace in the opposite wall to be beyond the foot of the bed. No double-bedded room should be less than 15 ft. square, and no bedroom should be without a fireplace. A child until two years old must sleep with the nurse, and requires the same allowance of cubic space.

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In towns epidemics spread with much greater rapidity than they do in the country. Owing to the near proximity of the several inhabitants, the network along which contagion travels is so close that very few children escape when any pestilence is dragging the enclosures in which they live.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOME TRUSTWORTHY GUIDES TO HEALTHY LIVING.

One Thousand Medical Maxims and Surgical Hints, for Infancy, Adult Life, Middle Age, and Old Age. By N. E. Davies, L.R.C.P. and M.R.C.S. (London: Chatto & Windus). Price 1s.; cloth, 1s. 6d.

Mr. Davies tells us that the idea of his useful little work owed its origin to questions put to the writer by a non-professional friend. The experience of every doctor is the same. People are fond of asking questions of their medical men about themselves, their bodily structure, and, above all, their ailments, real or fancied. We do not suppose for a moment that this practice will ever become extinct; but we think Mr. Davies's book will go very far to supply intelligent persons with a large amount of highly useful information, concerning not only the simple treatment of ailments, but also regarding many interesting facts of their bodily structure and functions.

Mr. Davies has adopted the style familiar to all in the "Enquire Within" series of books. He dispenses his information in small, and, we are bound to add, satisfactory and pleasant doses. Here are a few quotations by way of illustrating our author's style :—

71. Every mother should learn to use the thermometer: it predicts fever and dangerous illnesses as a barometer does a storm. They are sold by chemists at 7s. 6d. each, and are known by the name of "clinical thermometers." *

72. The temperature of the body in health is a little under 98½°, marked on the thermometer with an arrow; when the heat of the body at rest exceeds 100°, or falls below 97°, excepting under very rare conditions, danger may be looked for, and medical advice should be sought without delay.

73. In using the thermometer, the bulb should be placed in the armpit next to the skin, and not touching any article of clothing, for five minutes, and the arm drawn over the chest; then the temperature of the body may be read off, and the mercury brought down again to the arrow by gently tapping the thermometer against the palm of the hand.

74. If the temperature of the body reaches 103°, fever, inflammatory action, or constitutional disturbance is severe; 104° or 105°, very severe; 106°, very dangerous; and 107°, usually fatal; and when it reaches 108°, death may be expected within twenty-four hours. These figures refer to males and females alike.

75. In the great majority of cases of fever or inflammation, the temperature does not ever exceed 106°.

76. In fever, when the temperature returns to its normal 98½°, the "crisis" is past, and convalescence commences.

These are useful hints to mothers, and, indeed to every one else.

Taking another selection at random, we find the following useful information given regarding a variety of interesting matters :—

897. Under ordinary circumstances, from three to four hours may be taken as the average time for the digestion of a meal in the stomach.

898. Food should be well masticated before being swallowed, as its admixture with saliva is necessary to digestion.

899. The indigestion of old people often arises from their want of teeth to properly masticate food.

900. The skin and the lungs throw off nearly 3 lb. of effete matter daily.

901. The kidneys of a healthy man, between 20 and 40 years of age, give out 52½ oz. daily.

902. In injury to, or disease of, either side of the brain, the paralysis is found on the opposite side of the body to the seat of the mischief.

* Mr. Casella, 146, Holborn-bars, and Mr. Dollond, 1, Ludgate-hill, London, sell "clinical thermometers," as described above, for a few shillings. Every family should possess one.

903. "Short-sightedness" depends on too great convexity of the lens of the eye, so that the image of any object is thrown too much in front of the retina—the surface which conveys the rays of light to the brain.

904. "Long-sightedness" is the reverse of the preceding; the rays are thrown beyond the retina.

905. Convex or concave glasses will remedy these several defects.

906. The human brain weighs, on the average, forty-nine ounces in the *male*, and forty-four in the *female*.

907. The "heart" weighs, in the adult male, ten ounces, and in the female nine.

908. The kidneys, in health, weigh four to four and a half ounces.

These extracts really describe the nature of this book better than any words of ours. What we may add, is to the effect that Mr. Davies is a safe guide in all the matters with which he deals; and the book is one which, not only from its character but also from its price, should find a place among the "handy books" of every household.

A Physician's Sermon to Young Men. By William Pratt, M.A., M.D. Fourth Thousand. (Messrs. Baillière, Tindall, & Co.) Price 1s.

That such a book as this was needed, and that it is certain to accomplish much and lasting good, no health-reformer will deny. The quacks who prey upon young men can only be legitimately fought and conquered by the diffusion of a sound knowledge of physiology, and the text of Dr. Pratt's little book is based, we think, on sound science. Whatever tends to diffuse a knowledge of health, to afford mental strength and comfort to thousands, and to prevent false notions of either health or disease, deserves to be widely known. And it is in this light that we cordially commend Dr. Pratt's little *brochure* to young men, and to all interested in the welfare of youth.

The Mother's Guide to the Management and Feeding of Infants. By John M. Keating, M.D. Rewritten and revised by Armand Temple, B.A., M.B. (Cantab.), M.R.C.P. (London: Henry Kimpton, 82, High Holborn.)

The judicious care of infancy naturally presents itself as the foundation of the health of each generation. This fact is tacitly recognised, but not always acted upon; for medical men well know that it is in the treatment of healthy "bairns," and in the physicking of the unhealthy ones, that popular medical superstition most strongly holds its own against the advance of science. Dr. Temple's volume is one of a class which the development of education is rapidly producing in our day. As public intelligence advances, the care of health must necessarily assume a high place in the concerns of educationists; and amongst the topics in which the women of our race will, it is to be hoped, receive a complete education in future, are the care and management of children in health and disease. We have never met with a more complete "manual for the mother," than this book. The following preliminary tables are of high interest, and serve as an example of the practical style in which this book is written:—

How to bring up Babies.—(1.) Keep them warm; let the clothing be warm, but not tight. Give them plenty of fresh air. Open the windows freely at least twice every day, and send the children out whenever the weather is fine. Wash the child all over with warm water and soap daily (if there be any skin eruption, tar soap should be used), wiping it thoroughly dry afterwards.

Nourishment: Under Seven Months.—(2.) The mother's milk is the most natural, and therefore the proper food for infants. Let her, therefore, suckle her child, if she have plenty of milk, and give it nothing else until it is seven months old. If the mother have only a little milk, let the child have it, and give it also cow's milk and water, as directed in (3). Begin to wean the baby when it is from seven to nine months old.

How to Bring up "by Hand."—(3.) If the child must be brought up by hand, it should be fed with warm milk and water out of a bottle. The infant should take at first equal parts of milk and water; but when it is a month old, two parts of milk should be mixed with one of water. Each bottleful should have a small lump of sugar put into it. When good cow's milk cannot be obtained, use the Swiss condensed milk. Begin with a small teaspoonful in half a feeding-bottleful of warm water for a meal; increase the quantity gradually; two teaspoonfuls for a meal is enough for a baby three months old. No sugar should be added. Give the baby no other kind of food whatever. Most of the deaths from hand-feeding are due to the practice of giving gruel, arrow-root, cornflour, and other unsuitable kinds of food, which contain no proper nourishment. While the baby is under a month old do not give it more than half a bottleful of milk-and-water for one meal. The bottle should draw easily. It should be rinsed out with warm water every time it is used. It is a good plan to have two bottles, using them alternately, so that the one not in use may be soaking in soda-water till required, when it is simply necessary to rinse it well with clean cold water. The tube and cork should be kept in clean cold water. If the bottle be not quite clean the milk will turn sour, and the child suffer in consequence.

Importance of Regular Feeding.—(4.) During the first six weeks the child should be put to the breast regularly every two hours during the day. After that age, about every three hours. During the night it does not require to be fed so often. It the child be brought up by hand, it should be fed regularly in the same way.

Food, when over Seven Months.—(5.) When it is seven months old, the child should have an occasional meal of Nestle's milk food, or its milk may be thickened alternately with arrowroot and Nelson's patent gelatine. When nine months old, it should have one or two meals a day of milk thickened with Robb's biscuit, Hard's farinaceous food, Liebig's malted food, or good well-baked bread. This should be given by a bottle, and be made thin enough to pass through a sieve or strainer. The child should still have, in addition, plenty of milk. When nine to twelve months old, the child should be completely weaned. At ten months, it should have a little broth or beef-tea every day. At a year and a half, it may take a little meat every day, cut up fine or pounded; but even then milk should constitute its chief food.

Improper Food.—(6.) Beer, wine, spirits, and all other stimulants; tea, cheese, pastry, and other food such as grown up people take, should never be given to young children. Sleeping-draughts, cordials, and other kinds of medicine, should never be administered without medical advice.

We have glanced carefully through the pages of this work; its instruction is eminently sound; and we have nothing for it but unqualified praise.

A BOOK OF HEALTHY HUMOUR.

Dr. Corpus's Class; A Series of Lectures on the Human Body from a Comical Point of View. (London: Wyman & Sons.) [Price, 1s.]

This should rank as one of the best, most innocent, and most genuine books of humour which has of late been published. It really sparkles with wit, and should, we imagine, become highly popular with all who are in the habit of giving recitations and readings. The droll gravity of the "lectures" is highly amusing; and there is also a considerable amount of serious information interspersed amongst the wit of the volume. Such an example as the following should recommend the book to those who desire the good medical effect of a hearty laugh:—"In entering the mouth, we first come to the lips. These are the parts of the feature that enter largely into the matter of expression, of which I have already spoken. In pretty girls they are generally compared to cherries or roses. In such subjects they are also very liable to become 'chapped.' The best treatment for this kind of affection is a preventive one—keep the 'chaps' from them. That is better than lip-salve. Besides cherries and roses, there is another plant with which the lips are intimately associated, and that is the mistletoe. What would life be without a kiss

now and then? Some young fellows would almost give one of their ears for it—that is, with the right person. They probably would not consent to the sacrifice for the sake of their grandmother."

Sanitary Appliances, Etc.

"Sanitas" Preparations.—We have received samples of these preparations, which are so well known as disinfectants, that any further recommendation of them seems quite superfluous. We have already commended "Sanitas" in its various forms in the articles on "Disinfectants," which have appeared in our "Family Circle" pages; and we have also found it necessary to make frequent mention of these valuable disinfectants in our replies to correspondents. We can only repeat here what we have already said of these preparations—namely, that for cleanliness, absence of disagreeable odour (no small boon in the matter of disinfection), effectiveness in destroying smells, infection and their causes, the "Sanitas" fluids are not to be surpassed. A tin of "Sanitas" powder should be kept in every closet, and the pans of all closets should always have a little of the powder sprinkled therein. This practice alone constitutes a medicated "trap" against disease-germs and sewage gas. The "Sanitas" fluid oil emulsions are adapted for use under all possible conditions requiring disinfection, and the handy "Vaporiser," which the Sanitas Company now sell, renders it possible to disinfect a room thoroughly at a small cost. By means of a spirit lamp the fluid is volatilised, and the air and furniture of a room become (as we have proved by experiment) thoroughly impregnated with the pleasant and highly-disinfective odour of the substance. The use of "Sanitas" has really reduced the science of disinfection to a matter of easy everyday practice.

Dr. Nichol's "Food of Health" Biscuits.—We have received a sample of these biscuits, which have been subjected to a careful examination. The result of this has been to show that these biscuits are highly nutritious, bone-forming, and eminently adapted for weakly persons and children, whilst they are equally well suited for adults. Their use tends to obviate digestive disorders, amongst which constipation may be ranked. These biscuits are to had at 23, Oxford-street, London, W. A handy "Penny Vegetarian Cookery Book" is also issued by the same firm.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to "The Publisher," at the same address.

Contributors are requested to send stamps for the return of the MSS. in event of non-acceptance. Every care will be taken to ensure the safety of MSS., but the Editor and Publishers cannot hold themselves responsible for accidental loss.

Correspondents are requested to write on one side of the paper only. The Editor disclaims responsibility for the opinions expressed by Correspondents.

LETTERS TO THE EDITOR.

ELECTRICAL QUACKERY.

Dear Sir,—I have read with great pleasure your article on "Electrical Quackery"; and also the useful and clearly expressed papers by Mr. W. Lant Carpenter on "Electrical Appliances." It is not easy to estimate the amount of good they are likely to do in preventing people being imposed upon by the sellers of the (so-called) "magneto-electric" shams. Holding the post of Medical Electrician to a hospital, I often hear of these cases of imposition.

W. E. Steavenson, M.B. (Cantab), M.R.C.P.,
Casualty Physician and Medical Electrician to St. Bartholomew's Hospital.
Sept. 24, 1883.

RATIONAL DRESS.

Sir,—I observe you have been giving scope to the "Rational Dress" advocates of late; and to criticism of their methods of reform. If you do not deem the topic quite "threshed out," kindly allow me through your columns to ask Lady Harberton, Mrs. King, or any other "dress reformer," to point out to me wherein the "elegance" of their reform is to be found. We have all heard of the Venus de Milo and her Florentine neighbour as the models of the female form. But will any one tell me where a dress reformer is to be seen, the lines of whose body as clothed in the garments of wisdom, approaches to anything like the elegant shape of the human frame? "Dress-reformers" make much of the natural form of the body; and rightly so. But I have never yet seen a "dress reformed" lady who did not look somewhat dowdyish. I pray my fair friends to excuse the plain-speaking of a male creature. I have seen the "reformers" clad in "breeks," sack-like jackets, free flowing robes, *et hoc genus omne*, but never yet have I seen a dress-reformed lady exhibit a tithe of the elegance which a well-made, ordinary "close-fitting" (but *not* constricting) costume gives to the figure. There may be some dress reformers yet to come who will show us the graceful outlines of the form we all admire, as fashion shows those outlines to-day. But I haven't seen them yet. If they exist, then, for the sake of "rational dress," health, and æsthetics, I say, in the language of the poet, "trot them out."—I am, yours, &c., Willing to be Converted.

HEALTH IN THE HOME.

Sir,—Allow me a small space in one of the columns of your most valuable journal to say a little on the most important subject, Health—the chief object of good health being the wholesome and well arranged sanitary condition of dwelling-houses. There are, however, a variety of systems patented and brought before the public by numerous tradesmen and others, some builders, decorators, plumbers, merchants, &c., but I may say the simplest arrangement is the most effectual.

The following, if properly applied, may be considered a good system :—Cut off the communication of the house drain with the sewer by inserting a trap having a water seal at the nearest point to sewer. Over this trap build an inspection chamber (of glazed bricks) of suitable size for a man to get to the trap and inspect, or clean it out if necessary, and covered with an air-tight cover. Into this chamber pass an air inlet fitted with a non-return valve, or an open pipe above the roof.

The sketch, Fig. 1 shows a Buchan, No. 2, disconnecting drain-trap. A shows the fall of sewage into the trap, thus making it self-cleansing; B, course of sewage, C, the fresh-air passing through the drain. D, an access opening for the sewer side of the trap, also, if considered necessary, to ventilate the sewer. (No. 1

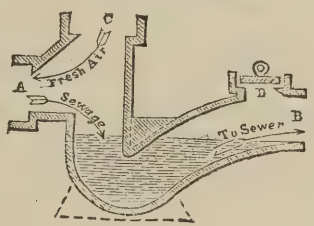

Fig. 1.

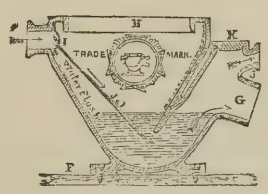

Fig. 3.

Fig. 2.

trap is made without this opening.) The pipes from the trap being of suitable size they should be well laid, the joints being made with good Portland Cement by an experienced man, care being taken that no surplus cement remains in the interior to cause a stoppage.

Should there be any junctions or bends required, these should be channel pipes, and an inspection chamber built over, covered with an air-tight cover giving a good access for passing a rod through the drain in case of stoppage.

The soil-pipe may lead into the drain with a bend junction Y, or otherwise as most suitable.

The soil-pipe should be carried up above the ridge of the roof, and a ventilator fixed thereon.

Fig. 2 shows a No. 1 Buchan's induced current fixed ventilator, for soil-pipe.

Rain-water and wastes should discharge over gulleys, which would disconnect them from the drain, and catch any sediment of sand, &c.

Fig. 3 shows a sketch of a "Carmichael" closet, which is a cheap and effectual and complete wash-down arrangement, there being always sufficient water in the trap to shut off the soil-pipe. F is the service-pipe, the water passing through the jet I, and completely washing out at G; K is an access opening for cleansing, if necessary; K represents a flushing-rim round the interior of the pan.

With this arrangement complete, the sewer being trapped off outside the house, fresh air continually passing through the inspection chamber and up the ventilator, it must be clear that no smells could well reach the inhabitants.—I am, yours truly,

William Hughes.

7, Everleigh-street, Tollington-park, N., London.

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

Alaska.—See article on "Sea-sickness" in a recent number of Health.

Entor.—Possibly not; because the conditions were not complied with.

Cantor.—Edinburgh or London.

J. Bingley.—Try the effect of a letter to the firm.

Walls.—No quack can sue for professional services. He can be indicted, if good evidence be forthcoming, for practising medicine without a qualification to do so.

S. S.—The work you name was reviewed in Health, No. 20, page 318. Its title is "Kallos," and it is published by Simpkin & Co.

SANITARY.

Sylvia—There is no doubt that the system named is a good one. We know it well.

A. J. Blake.—Try the effect of Sanitas oil.

B. Kimpton.—No question of ventilation involved; only one of disinfection.

A. Kitching.—Write for a syllabus to the Secretary, Science and Art Department, South Kensington, London. If not informed, write us again.

R. A. C.—The air we regard as bracing, and the situation of the houses good.

MEDICAL.

G. T.—1. Clothe warmly, and, if necessary, fortify your system against attack by tonics. If weak in chest, take cod-liver oil. A series of hot salt baths would also do good. 2. Yes: the ear-trouble may be cured. Consult an ear-surgeon. You probably have a perforation of the "drum," and there is always risk of cold and inflammation till you get the drum healed.

E. Smith.—Yours is a by no means uncommon case of dyspepsia. You must have more out-door exercise, and give up the late supper. See to the condition of stomach and bowels. More fresh air and a cold sponge-bath will do you good.

Mongoose.—See our "Notes by the Way," No. 25 Health, for remarks on snake-bite. The poison of different snakes seems to act in different ways. There is no remedy beyond excising the bite, preventing the spread of the poison through the circulation, and giving plenty of stimulants. There is no one antidote which can affect the poison when once introduced, but experiments are proceeding now in the entire subject.

Anti-Quack.—No need to be alarmed; what you mention is a perfectly normal occurrence in healthy life. See that he sleeps on a hard mattress, and avoid fluids late at night. Yes, we should think Dr. Pratt's "Sermon to Young Men," (Baillière, Tindall, & Cox, London) should be read; but be careful not to fancy (or to instil the belief) that any disease is present.

Victor.—See advice to "Anti-Quack," above; take a teaspoonful of Fellows' "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water; try cold sponging; and see what is said above about there being no disease present.

A. H. W.—Try a vegetable dietary, and "Friederichshall" mineral water. The latter we deem a perfect cure and preventive when taken each morning (or oftener) for a time.

M. Wilson.—No; the pad has no advantage that we can see over a flannel protector. Glad our advice has been effective.

Smoker.—We do not approve of cigarettes smoked as you use them. The Strawfena Cigarettes of Messrs. Robinson & Barnsdale, of Nottingham, are the best. We have seen results such as you name from cigarette-smoking, though we do not think the paper has much to do with them. We should advise you to give them up for a time.

Experience.—See advice to "Victor," above.

One Almost in Despair.—Try the effect of a saturated solution of boracic acid used freely to the parts. This will counteract the offensive perspiration; but you are evidently in a low state of health, and we should advise you to have a good medical opinion on your general condition.

Clepington.—Yours is a case for strict attention to the general health. Let your food be of the simplest kind; give up tea and coffee (likewise all medicines); take a little mineral water in the mornings for the stomach troubles; and if indigestion is present a little Morson's "Pepsine," as directed on the bottle. You must try cold sponging in the morning, and have a little open-air exercise. You will grow well by common care, not through tampering with all kinds of drugs.

Vox Humani.—Seeing that the voice depends upon the shape and size of the larynx, the nature of the vocal chords, &c., we can only say that any one's voice may be "improved" within certain possible limits. The gentleman you name has a voice of full compass, improved and strengthened by much hard training. It is impossible to say how far your voice can be "trained." See Gordon Holmes on "Voice and Voice Production" (Chatto & Windus)—a work we reviewed some time ago in Health. Modes of treating the voice will be found described therein.

Canton.—Thank you for your cheery letter. We are glad to hear our advice has put your troubles in a new light. The powder you enclose of "quack" production is probably sulphate of zinc. It is regretable to hear of a chemist in league with a quack.

H. King.—Thanks for your kind letter. The safest advice is that which teaches you to work cheerfully and hopefully always.

Mon Frère.—We should advise you to make a change as complete as possible in your dietry. Try a vegetable diet for a time. See to the ventilation of your bedroom. The first drug you name may cause headache. You do not say why you take it. The tonic recommended to "Victor" in present number will do you good.

A Lover of Health.—The prescription may safely be tried. If not successful, we shall be glad to advise further.

Esca.—There is no special book for your case, but Dr. Chambers' book on "Diet in Health and Disease" should suit you admirably. The book costs 10s. 6d., and is published by Smith, Elder, & Co.

A. H. Sexton.—See reply to "Victor" in present number.

Y. K.—You are generally "out of sorts." We should firstly recommend you to try a little Friederichshall Water each morning, and to leave off all stimulants. With food (avoiding tea and coffee) take a little Morson's "Pepsine" as directed. Never mind the phrenology, and don't worry over any "causes" of disease you fancy you know of. Such fears are groundless. In your case cold sponging will do good; and, of course, your mental condition requires looking to. In the other matter, we cannot presume to advise you. Hereditary disease is always terrible.

Implement Works.—No; the fluid is not what you suppose it to be. Try cold sponging every morning, and follow the advice given to "Victor" above. The medical man you name is a "qualified quack"—you can perhaps appreciate the appellation. No member of an honourable profession would advertise as he does; and his claims for mention as a successful doctor are, we think, of the most meagre description. Have nothing to do with him. Be cheerful, and rest assured you are perfectly healthy—only a little nervous about yourself.

Dereham.—See advice to "Victor" in present number of Health.

Quicklime.—The ear trouble corresponds to that advised for in the case of "G. T." above. See an aural surgeon. We think in your case the following will do much good:—Syrup of iodide of iron, three drachms; mucilage acaciæ, one ounce; cod-liver oil to

make up six ounces. A tablespoonful thrice daily. The use of this will likely benefit your ear and other affections.

Southampton.—What you mention is quite common in health. See advice to "Victor" above.

A Constant Reader (please use a more distinctive name) may be recommended to purchase Mr. Banting's pamphlet on "Corpulence" from Harrison, Pall-mall, London, and study what is therein said about the rational way of decreasing stoutness. We shall shortly publish papers on "How to get Thin or Fat."

Atra Cura.—Why not give a good tonic a fair trial? Try Fellows' "Hypophosphites," which we have seen do much good in cases such as yours. Try this, and in event of any laxative being required, take "Æsculap" water in the morning. Yours is a case for tonics, fresh air, and generous diet—not for aperients. Write again if not improved.

Dim Sight.—Probably an affection which judicious advice regarding the wear of glasses will remove. Write to Mr. Browning, 63, Strand, W.C., for his method of suiting the sight with glasses. Such a method applied now may save your vision from ultimate weakness. The cause you mention had nothing to do with your ailment, in our opinion.

Chelsea.—Try the cod-liver oil and iron, as recommended to "Quicklime" in present number of Health. If that does not suffice, write again. The medicine is a fat-producer and tonic as well. Don't overdo your exercise.

J. M. Calton.—Try the effect of a lotion of three drachms of sulphur, four drachms of glycerine, and four ounces of rectified spirit—this to be applied at night to the eruption.

Trike.—Local irritation. Look well to your garments, and see there is no injurious dye about any of them. There is possibly too great friction. No treatment required beyond a little Vaseline applied locally, a slight aperient, and rest.

R. Whyte.—No; no injurious effect whatever. You are in very good hands, and cannot do better than obey all directions.

Toujours Loyale.—Where have you ever heard of an authenticated case of poisoning by absorption of carbolic acid from dressings? Don't you know that a whole system of surgery (antiseptic) is daily practised with this treatment? Send us any details; but we must say, we think you labour under some misapprehension.

Ora Pro Nobis.—Try change of dietary, and avoid vegetables for a time. Give up tea and coffee, and try cocoa instead. Rest after meals, and take moderate open-air exercise. Write again if not improved. A little Pepsine with your food may also assist you; or the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a-half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food.

W. M. M.—We think that under the whole circumstances of your case you should see a good physician. Send us your name and address. The person who advertises we know nothing of. We should not advise you to consult any one who advertises.

Mars.—We think you possess a special idiosyncrasy or tendency to cold—a not uncommon feature, and one which may or may not depend on a low state of the system. What we should recommend would be to try the effect of cold sponging each morning and the tonic recommended to "Victor" in present number. Write again if unimproved. Be cheerful—another piece of advice worth attending to.

E. Lowe.—We should always be glad to advise you in all ways, to the best of our ability. The case you mention is one of over-anxiety and over-education. What we would recommend is, firstly, a *prolonged rest* of months. This may seem hard, but it is necessary. The patient should simply rest; and if you can afford a visit to Southport or Blackpool (still resting) it would do much good. Let the patient also take a teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water. We should like to hear full particulars about patient's personal health in all ways, and the nature of the strain, and how it affected any natural functions. Glad to advise further, if necessary.

Wildfire.—Smear the hands with pure Vaseline every night. Write if not successful in curing.

Fred. W. C.—The effect of our former recommendation, from your account was, we think, to bring out your trouble to the surface. Try now the tonic recommended to "E. Lowe," above; and let us hear how you are after a trial thereof.

J. Fletcher.—Yes; Koumiss is well known, also Mullein. We approve highly of the Maltine Company's preparations, in which malt is added to sundry "foods." Try the maltine and cod oil, and see what effect ensues. Our papers on "How to get Thin or Stout," will shortly appear. A visit to the seaside, by increasing the appetite, may also do much good. "Cod-oil Emulsion" alone should also suit your case; with plenty of fatty articles, mutton chops, cream, butter, eels, &c. Glad to hear from you again. See to the patient's general health.

D. Maclean.—Try first the effect of the cod oil prescription ordered to "Quicklime," in present number, and write again after a trial of the medicine. Clothe warmly and avoid chills.

W. H. Harvey.—Both of your queries may be answered by referring you to the reply to "W. Scott," in Health, No. 24.

X. Y. Z.—Try the following:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half-an-ounce; infusion of senega to make up six ounces. A tablespoonful every four hours. After one trial of this let us hear from you again.

A. W. G.—1. We believe the "food" you name to be thoroughly good. 2. Thanks for suggestion, but at present it is impracticable in journalism.

W. Sutton.—Certainly; try Morson's "Pepsine" by all means, as directed on the bottle. Glad to hear yon are improved. As the vegetable dietary does not agree with you, try the effect of milk, light puddings, &c., for a time. For the back ailment try cold sponging each morning, and brisk friction with a flesh-brush.

Squip.—Our advice to you is to see a good surgeon (avoid quacks). Take the following:—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessertspoonful thrice daily. Dress the sore surface with glycerine of borax.

F. G. S.—We do not recommend the medicine you name. Read Banting "On Corpulence" (published by Harrison, Pall-mall, London). The only rational way of reducing size is to modify diet. The circular you mention shows once again the "old stage-trick" of the quack.

Eyesight.—Our previous opinion is confirmed by your letter. See to getting a good pair of spectacles adjusted to your sight by the method of Mr. Browning, 63, Strand, London, to whom write for particulars.

Estomago.—Try the following prescription, which will ease and cure the symptoms:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Write again if unrelieved.

Jane Moody.—1. By no means use any lotion for the head containing (as your lotion does) lead. See our papers on the "Hair" in Parts I., II., and III. Health. 2. See advice to "Fylde" in No. 24 Health.

Sedaem.—The quantity of ozone varies greatly in different places. There is no rule for its distribution, but it exists in greatest quantities by the sea and in mountain air.

Juvenis.—We do not recommend you to tamper with the mixture you name. See a good dentist, who will destroy the nerve for you.

Inceptor.—Caviare is the preserved roe or eggs of the sturgeon—a great delicacy.

Hope.—No connection between the red nose and the symptom you name. For the former, try a vegetable dietary, and avoid stimulants. Attend carefully to general health.

Athos.—Never heard of the preparation. It might, however, be tried. We do not know where it can be procured. There are one or two vegetable lotions we have seen tried with good effect. We believe in iron given internally, with careful attention to the health generally. Some cases resist all remedies, if the health is low.

C. C. Wilson.—Try nearer the North—Highgate and Hampstead.

H. W. B.—Your symptoms are those of slight weakness, for which the best remedy would be a thorough change for a week or two. Drink freely of potash water for the symptoms you name. There is no need to be alarmed. Possibly you are closely confined; if so, try open-air exercise.

Sufferer.—We have found cold sponging in the mornings, with brisk friction by means of a hard towel thereafter, a capital preventive of cold and of liability to chill. Try this, and clothe warmly.

A. Grey.—As all letters are destroyed, and as we cannot be expected to keep your particular case in mind, kindly re-state your wishes. So far as we can discover from your letter, the preparation should be fluid, not thick like a pomade.

Mrs. Wood.—We had never heard of the dentist or the method you name. We can form no opinion regarding the apparatus from the meagre details sent. If a sample of the apparatus is sent to us, we shall be glad to submit it to Mr. Carpenter for his opinion.

Fides.—The "tonic" may be known abroad. It is not known here. The public should be highly suspicious of all such preparations. These "Phosphorus" tonics are often so only in name. Our future programme includes such papers as those you name.

F. S. C.—No medicine can accomplish what you wish. Your only hope is careful treatment to remove any abnormal condition, and, above all, sound general health, in the absence of which your hopes cannot be realised. There should, from your present account, be no difficulty in attaining the desired end. Let the "opposite side" be careful and moderate in all things. Take plenty of rest. Glad to advise further if necessary.

H. G. S.—See advice to "Victor" in present number. Be cheer-

ful, and know that you suffer from no actual disease—only a slight weakness, which time and care will improve.

Thomas.—You would see the quacks you name were publicly noticed in the Dublin Police Court.

A. N.—1. No; the two preparations are widely different, and each must be judged on its own merits, and for each special case. 2. Oiled silk is preferable. The object is simply to prevent evaporation.

J. B. W.—Yes; to read during meals is commonly reckoned as physiologically erroneous—we won't say as absolutely injurious. The theory is, that as the stomach and other organs require (and exert) nervous power during digestion, it is better to allow nothing to interfere with their work. We do not say that this can be borne out; but the feeling of satisfaction which follows a meal, and which is often accompanied in good health by drowsiness, probably indicates that a certain amount of nervous exhaustion occurs during digestion. The pleasant chat of a dinner-party is probably of value physiologically as supplying a slight mental stimulus, without making too severe demands on brain and nerves. If any evidence exists at all on the subject, we think it tends to discourage reading at meals.

J. Lucas.—Thanks, many, for your kindly words. We shall always endeavour to aid the causes you name. 1. No positive cure for corns save extraction. Touching with caustic repeatedly may cause the corn to degenerate. 2. Good glasses, tested accurately, as by Mr. Browning, 63, Strand. Spectacles properly fitted do wonders. Guard your eyes at night with a shade. 3. The ear-noises are a symptom of slight head-overwork, we should fancy—if not caused by wax. Try rest, cold to the head, and the tonic recommended to "Victor" above. 4. Salt assists digestion, for the reason that certain compounds of the gastric juices are elaborated therefrom.

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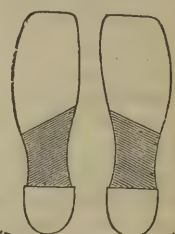

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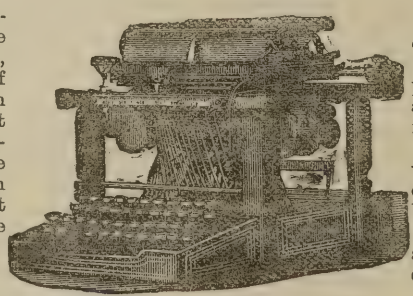

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, OCTOBER* 12, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

Now that "chill October" is upon us, the usual amount of coughing, sneezing, and other symptoms of that annoying ailment "a cold," is heard around us. There are very few persons indeed who escape colds of one kind or another, just at the advent of autumn, when the summer's warmth is exchanged for fogs and chills. And there is no question that to very many, even a "cold in the head" is a serious enough matter, affecting as it does both eyesight and nose —to say nothing of temper and placidity of mind. If one could invent a panacea for cold in the head, there would be no question of the rich reward which would await the successful inventor. But there is no such thing as a universal cure and preventive. In the attempt to avoid colds, the great secret of success is summed up in the words, Keep up a high standard of general health. In the great majority of cases people "catch cold" because their health is below par. We know of a case or two in which a business worry renders the subjects thereof liable to a severe cold, if exposure to the conditions for cold follows. The person who feels "out of sorts" is notably liable to contract a vast number of complaints which his healthy neighbour avoids. Amongst these complaints none is more frequently caught than a "cold."

✣ ✣ ✣

"What are the general conditions which suffice to ward off liability to colds?" is a question frequently put in the correspondence columns of this journal. The question indicates a belief that we are able to name some drug which will lessen the liability to the affection in question; and doubtless many correspondents feel surprised that no such advice can be given. What people should know is the simple fact that cold, as often as not, attacks only those whose health is not what it should be; and the lesson we learn from this well-grounded belief is simply an oft-repeated one, "Prevention is better than cure." From a cold in the head to typhoid fever, the lesson holds true. It is only when people begin to understand how much power over their health they hold in their own hands that we find the search after "something which will cure everything" is given up. After all, it is a much simpler thing to prevent disease than to cure it; and as regards the expense which we save by "taking care of our carcases" (as the frank Americans put it), no demonstration is needed to show that any money spent in avoiding diseases, and in keeping well, is worthily disbursed.

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To keep entirely, or, at least, tolerably, free from colds is by no means a difficult task, provided we observe some such facts and laws as the following:—Firstly, we should attend to the ventilation of bedrooms. Many a case of cold arises from persons sleeping in a warm, ill-ventilated room, and from the sudden plunge into the colder air of the house which inevitably results in the morning. An equable temperature is one great preventive of colds. This explains why, in the equable temperature of the seaside, colds are less frequent than in towns. Secondly, we are firm believers in the preventive value of cold sponging each morning. Of course, everybody cannot take a cold bath all the year round, but those who do so diminish (other things being equal) the tendency to cold. But most persons are able to sponge the chest every morning, and thereafter to practice brisk friction with a rough towel. By this means a tendency to chest colds in particular is prevented, and the general health is also largely benefitted.

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As regards clothing, there is little to be said here. Of all follies, surely the worst is the practice of clothing in materials which, either from their make or their weight, are insufficient to protect us against chills. Heated rooms, evening dress, and the draughts of lobbies, explain a very large number of the colds from which we suffer; but the day of common sense in ventilation and in amusement has not yet dawned, and till that happy era arrives "the sound of the sneezer" will be heard in the land.

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Professor Ferrier's "snuff" for colds in the head is a useful application, which deserves to be widely known. It consists of hydrochlorate of morphia, two grains; subnitrate of bismuth, six drachms; and gum-acacia in powder, two drachms. Exercising due care in its use, from a quarter of this quantity to half, may be employed in the course of twenty-four hours. Lastly, it should be borne in mind, that a change of air (and, in our experience, a change to the seaside) for even a few hours, will sometimes cure a severe and obstinate cold in the head, when all other remedies have failed.

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Those who know Folkestone, will remember the statue of William Harvey, the discoverer of the "Circulation of the Blood," which adorns the Lees of that town. The remains of the great physiologist now lie in the vaults of Hempstead Church, Essex; but the body, we learn, is to be removed, with the consent of the next of kin, to the Harvey Chapel, where it will find an appropriate resting-place in a sarcophagus which the Royal College of Physicians of London has provided for it. This interesting ceremony is to take place on the 18th of the present month. Medical science does well thus to honour the memory of the man who laid the foundation of our knowledge of the heart and its work. It is a curious but interesting thought that a child to-day may in a few hours learn from a shilling primer of physiology, what, in the

history of science, it took centuries to discover. Do we always value, as highly as we might, the knowledge which so readily lies to hand to-day?

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The "silly season" of the year has lately been productive in the pages of the newspapers of some discussion on questions of a physiological kind. There have appeared long arguments regarding the dinners of city clerks, and concerning the impossibilities which lie in the way of Paterfamilias finding a sanitary and otherwise suitable domicile. Such discussions effect much good. When one correspondent suggests that a vegetarian dinner is the correct meal for the clerk, the remark is certain to set people a thinking, or even experimenting upon novel phases in diet. When some one suggests that a fish dietary might with advantage be tried, the suggestion may awaken curiosity regarding the nutritive properties of fish. Questions of such supreme social interest deserve wide mention. As a nation we are certainly inclined to tread very closely in the ways of established custom, and there can be no doubt that we close the door to many advantageous changes in the way of diet by our too rigid adherence to the ordinary foods. As we have already pointed out, there can be no hard and fast rule for all in the matter of food. The question of what to eat is one eminently adapted for individual experience to determine; and, indeed, most of the vexed questions in diet can and will be solved only by the intelligent study by individuals of what is best suited for their easy digestion.

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The latest addition to the list of useful medical substances is skate-liver oil. Mr. Henry, of Macduff, prepares this substitute for cod-liver oil. The skate oil is described as being of thinner consistence than the cod oil, and as being less unpleasant to the taste. We should require, however, to see an analysis of the oil before deciding regarding its merits as a substitute for the cod oil. The skate belongs to an entirely different (and, geologically, more ancient) family of fishes from the cod; and it is possible, or even probable, that very important chemical differences exist in the oil derived from its liver when compared with that of the cod.

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Baths, whereof the hot water is produced by the action of gas, are no doubt, handy enough, but that they have their special dangers is clear from the report of a fatal case which recently formed the subject of a coroner's inquiry at Brighton. Rendered drowsy by the foul air of the bath-room, the unfortunate person was killed partly by suffocation, and partly by scalding. The evident moral of this recital is, that in all cases in which gas is used to heat water in bath-rooms, there should be abundant ventilation.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

TYPE-WRITERS AND WRITER'S CRAMP.

The "type-writer," of which most of our readers must have heard, is a machine in which, by pressing upon a series of "keys" arranged in a key-board, in front of which the operator sits, printed characters, corresponding to the keys selected, are duly impressed upon paper. The machine in this sense is not a "writer." It does not trace written characters, as does the pen. It is a handy printing-machine, which can be manipulated as easily and as readily as the pen, and which, moreover, may not only exceed the pen in speed, but prints characters that are always legible and clear. The growing popularity of the type-writer is due, we fancy, to two causes—the legibility of its work, and the high rate of speed which the practised operator can attain form the first of these causes. The second cause has a medical basis. Persons who write much, often suffer from weariness of the muscles of the right arm and fingers. A more serious disease, termed "writer's cramp," is also known to occur in many who earn their bread by the pen. The use of the type-writer abolishes the tendency to this disease, owing to its bringing into play muscular combinations which are unknown in the use of the pen; and even the alternate use of pen and type-writer has been highly commended as a pleasant variation to all who have much to do with literary pursuits.

The history of the type-writer, like that of all other inventions, is one of modification and evolution. M. Foucault exhibited in Paris, in 1855, at the Exhibition of that year, a writing machine adapted for the use of the blind. Therein, certain types were pressed against carbonised paper, which was laid in turn over the white writing-paper, and in this fashion impressions of the letters were obtained. Subsequently, various attempts were made to produce a perfect type-writer; but it was not until 1873 that America gave us the machine which, with certain improvements, stands before us in 1883 as a highly useful substitute in all ways for the pen. The "Remington" Type-writers are those to which we allude. They are to be inspected and purchased of Messrs. Beeman & Roberts, the English agents, of 6, King-street, Cheapside, London. We can assure our readers, not only from personal acquaintance with, and constant use of, a type-writer, but from a knowledge of the value and advantages of type-writing work, that they will not grudge the time they may bestow in an examination of a mechanical apparatus of extreme interest, and one destined, we believe, to largely obviate a disease—"writer's cramp"—which many a clerk knows only too well.

The "type writer" which stands before us as we write, appears as an oblong box about 16 in. in length, height, and depth. On uncovering the "writer," we see a cylinder on which the writing-paper is wound, and which, in conjunction with a roller, brings the paper into the proper position for contact with the types. Raising the cylinder, we look down upon a hollow cavity whose sides bristle with wires. These wires bear each a type, and when, looking down at the key-board, we press one of the keys marked, say "M," we see that the corresponding letter borne on the end of its lever at once flies out of its rank and file, and strikes upwards, towards the point where the paper would have appeared if the cylinder had been left in its place. Running across the space above the types, and coiling and uncoiling on a drum at each side, is an inked

ribbon. This ribbon moves automatically as the types are worked, and as it passes between the types and the paper, it follows that as each type strikes the ribbon, it leaves an inked impression on the paper above. Each type is made to rise exactly in the centre of the open space to which we have alluded. Four rows of keys form the key-board. The characters—which vary in style in different type-writers, and which present us with one or more "founts" according to the make of machine—include the alphabet, numerals, punctuation-marks, and other items necessary or useful in correspondence and literature, generally. Lowest down, is a "bar," which, on being touched, causes the paper-cylinder to pass onwards, but withont bringing any corresponding type into play. This is the "spacing bar," wherewith the necessary spaces between words and sentences are made.

Sitting thus in front of the type-writer, we press the keys—the paper being adjusted on the cylinder. We begin our line, and work with both hands, very much in the fashion of a piano-player. Attending to the spaces and punctuation, we readily, after a little practice, form our line; but as we near the end of the first line of the manuscript, a bell rings. This is the automatic signal that we must make arrangements for finishing the last word of the line, or for duly breaking it in two and transferring part to the next line. At last the end of the line is reached, and a new line has to be begun. This is contrived readily, simply, and instantaneously. We press a lever placed at the right hand of the machine. The paper-cylinder is thus released, is carried back to its starting point on the right side, while at the same time the cylinder is made to revolve on its axis so far as to give sufficient space between the line just printed, and that which is to come. If we wish to economise paper, we may make the space between the lines narrow by adjusting a small key at one end of the cylinder. This key, in turn, and when otherwise set, is made to enlarge the space between the lines. When any one type has been pressed and has made its impression on the paper, no further trouble is needed on the part of the operator, for that type instantly falls back by gravity to its place, ready to be again used. It is this reduction of all useless or avoidable labour which has placed the type-writer in the foremost rank of mechanical appliances; and it is similarly this ingenious placing of every advantage in the way of ease and time to the operator's credit, that enables writing with this machine to be rapidly executed.

Regarding the rate at which words may be formed by the type-writer, much, or indeed everything, depends upon the skill and practice of the operator. Here, as elsewhere, "practice makes perfect," and the daily use of the machine tends to a quicker style than where intervals are allowed to elapse between its employment.

(To be continued.)

MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc., &c.

EIGHTH PAPER.

At the meetings of the British Association as at present organised, while the meetings by day are divided into sections, corresponding with the various branches of science, two of the five evening meetings are devoted to lectures of a less technical character than the sectional papers, and these lectures are given before the whole Association. At the recent meeting at Southport, one of these two lectures was given by Professor McKendrick, Professor of Physiology in the University of Glasgow, who took as the title of his address, "Galvani and Animal Electricity." We propose to give our readers some account of this lecture, which was a masterly summary of the present state of knowledge of the subject, as well as an experimental demonstration, given before an audience of more than 2,000 people. The lecturer commenced by referring to the experiments of Galvani at the University of Bologna in 1786 on the contraction of frogs' legs near an electrical machine, and on their subsequent use in experiments with atmospheric electricity, which led to the idea, afterwards disproved, that the nerves conveyed electricity from the brain and spinal cord to the muscles. Volta's researches, and demonstration that the electricity was due to the application of heterogeneous metals to the flesh, were then described, and the invention of very delicate galvanometers for the purposes of such researches was alluded to in passing. In 1837, Matteucci, of Pisa, discovered that the interior of a muscle was in an electrically negative state, compared to its surface as positive. Then in 1841 and following years came the wonderfully delicate and beautiful researches of Du Bois Reymond, the present Professor of Physiology in the University of Berlin, and the methods employed in these were described and illustrated at some length by the lecturer, an image of the actual apparatus employed being projected upon a screen; another screen received the spot of light reflected from the very sensitive galvanometer needle, the movements of which were thus made visible to the whole audience. In experiments with muscles, it was necessary to have an arrangement which, while touching the muscle, caused no current in it, and yet drew off to the galvanometer any current produced by the muscle. For this purpose, zinc troughs filled with solution of sulphate of zinc, clay points saturated with the solution, and blotting-paper, answered best. With the aid of this apparatus, the lecturer actually demonstrated to his audience the so-called muscle-current which passes between the interior and exterior of a muscle, when one is cut; two uninjured surfaces of muscle produced no such current. A similar, but weaker, current can be obtained from living nerve. Having shown the existence of this muscle-current, Professor McKendrick made further experiments to demonstrate what is technically called the "negative variation," *i.e.*, the diminution in this current when the muscle is caused to contract by stimulating its nerve, and he stated that refined experiments showed that this change really occurs before the muscle contracts; hence he was disposed to regard this electrical change as the physical expression of the chemical changes occurring in the muscle, antecedent to the muscular movement. The electro-motive force of the natural current of a frog's muscle is about $\frac{1}{8}$th of a volt. This negative variation passed in a wave from the point of irritation over the whole muscle. As a good instance of these muscular currents, the living heart of a frog, isolated from the body, was projected on the screen, and while there, the necessary connections were made with the galvanometer, which showed the current developed at each beat. Being near the lecturer, the present writer was able to see that this frog's heart sustained, and caused to oscillate, a column of mercury about $1\frac{1}{2}$ in. in height! Then the lecturer gave a successful demonstration of the fact first announced by

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Professor Dewar and himself, that when light falls on the retina, or nervous network, of the eye, an electric current was developed therein, and this again he considered to be the physical expression of chemical changes occurring in the retina. In the last of the demonstrations, the lecturer showed that when the muscles of his own arm contracted, electric currents were apparently produced in them, although it was just possible that these variations in the current might be due to differences of contact between the fluid and the skin. After pointing out that electrical changes were produced by all kinds of vital phenomena, *e.g.* secretion, Professor McKendrick very briefly described the anatomy of electric fishes, whose electric organs were supplied with very large nerves; he regarded the discharge of one of these in, *e.g.* a torpedo, as a series of smaller currents, just as the contraction of a muscle as a whole is really due to the separate contraction of the numerous fibres composing it; they might be considered as a modified muscular apparatus which, when stimulated by nerves, gave, not motion, but electricity—another instance of the so-called correlation of forces.

In summarising his lecture, Professor McKendrick said that all these electrical changes were really expressions of the vital changes occurring in living tissue under the action of stimuli. In most animals, including man, the production of electric currents was an incidental phenomenon, indicating the occurrence of certain chemical reactions, and nothing more. Besides, the currents so produced were feeble and evanescent, and bore no relation to the general well-being. Consequently, all attempts to influence the body by the action of magnets had no rational basis, and in this connection the lecturer referred his audience to the present series of articles upon this subject in HEALTH, speaking of them in terms of high commendation. The so-called phenomena of "animal magnetism" were of a subjective character, dependent upon peculiar states of the nervous system, and had nothing whatever to do with electricity and magnetism. Their subjective character, however, rendered them very difficult of investigation, and hence they were very liable to fall into the hands of the charlatan. One safeguard against this was the recognition of what the electrical phenomena of the living body really meant, and one purpose of the lecture would be served if it showed that to detect and account for these phenomena required the most refined methods of the physicist and physiologist, and that they gave us only a glimpse into the intricate changes occurring in living tissue.

At the conclusion of the lecture a vote of thanks was proposed to Professor McKendrick by Professor Ray Lankester, the President of the Biological Section. In the course of his remarks he again alluded to the injurious nonsense talked at the present time about animal magnetism, electro-biology, &c., and said it could not be too strongly impressed upon the public that unless the alleged electricity could be measured in its development and application, in connection with human beings, it was practically an imposture.

In our next article we propose to give some account of Dr. W. H. Stone's paper, read at the Southport meeting in Section D (Biology), upon "The Electrical Resistance of the Human Body."

"HOW TO OBTAIN LIGHT FROM COAL GAS," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[ADVT.]

SANITARY GOSSIP.

By "SANITAS."

HYGIENE IN PAGAN TIMES.—History teaches us that the science or knowledge which relates to the physical condition of man—to the means by which his health may be sustained and his life prolonged to old age—was cultivated in pagan times by the early Greeks and Romans; independently, likewise, of the pathological treatment of disease. So far back as between six and seven hundred years before the birth of Christ, Herodicus and Pythagoras, two Greek physicians, wrote upon sanitary subjects, and recommended gymnastic exercise, not only as means of preserving health, but in the treatment of disease. Another Greek doctor, named Asclepiades, of Bithynia, a great traveller, who flourished about a century or so preceding the Christian era, is said by Pliny (although the latter had little respect for him) to have used only five medicinal remedies, namely:—1. Abstinence from flesh meat; 2. Abstinence from wine, under certain circumstances; 3. Friction; 4. Walking; 5. Gestation, or carriage exercise. By these he proposed to open the pores, and let the corpuscles, or little molecules, which were believed to cause disease escape in perspiration. For his leading doctrine was, that all disease arose from an inharmonious distribution of the small formless atoms of which the body is composed.

SOAP AND CIVILISATION.—The late Lord Beaconsfield, in his Disraeli days, is credited with the aphorisms that "soap and civilisation" should be defined as "cause and effect," and that "the study of the public health is the first study of a statesman." How these principles are illustrated we were told by Charles Dickens, at a dinner in London, on May 10, 1851, where, in the course of a speech on Sanitary Reform, he said:—"That no man can estimate the amount of mischief grown in dirt. That no man can say the evil stops here or stops there, either in its moral or physical effects, or can deny that it begins in the cradle and is not at rest in the miserable grave, is as certain as it is that the air from Gin-lane will be carried by an easterly wind into Mayfair, or that the furious pestilence raging in St. Giles's no mortal lists of lady patronesses can keep out of Almack's. Fifteen years ago, some of the valuable reports of Mr. Chadwick and Dr. Southwood Smith, strengthening and much enlarging my knowledge, made me earnest in the cause in my own sphere; and I can honestly declare that the use I have since that time made of eyes and nose, has only strengthened the conviction that certain sanitary reforms must precede all other social remedies, and that neither education nor religion can do anything useful until the way has been paved for their ministrations by cleanliness and decency."

INFANTINE MORTALITY.—In one of his excellent lectures, the veteran sanitarian, Mr. Chadwick, tells us:—"The best general test of sanitary conditions I take to be the death-rate of children under one year, as the condition of children is to the least degree affected by occupation or migration, and as such conditions denote intelligent care of infant life. Of children, one in seven died within the first year of birth in this county of Northamptonshire." It seems to me that "intelligent care" cannot be considered in connection with such a mortality, when we find exactly the same death-rate to have prevailed elsewhere, owing to a cause that was removable; for, during the earliest quarter of a century after the establishment of the Dublin Lying-in Hospital, out of every seven children born in it one died. The cause of such a prodigious mortality was found to be the want of proper ventilation in the hospital wards; and as soon as this defect was remedied, there resulted only one

death out of 104 births. Here we have 325 children massacred during the first quarter of a century by the same poisonous agency that on the night of June 18, 1756, destroyed 123 out of 146 of the British subjects who were forced into the Black Hole of Calcutta by order of Sarajah Dowlah, a Nabob of Bengal. That dungeon was only 18 feet square. Out of 1,000 infants under one year old there die yearly—In Sweden, 141·8; in Denmark, 137·5; in England, 182·6; in France, 223·2; in Spain, 249·6; and in Italy, 273·3. At some future time I shall explain the chief reasons for this high mortality on the Continent.

Hygiene amongst the Bees.—In our young days we used to read :—

> How doth the little busy bee
> Improve each shining hour,
> And gather honey all day long
> From every opening flower!

But though Dr. Watts celebrates the industry of the busy bee, he tells us nothing of its hygienic practices. Perhaps this is because he may not have known of the wonderful discipline kept up in connection with honey-making, so as to have a perpetual supply of fresh air. A bee-hive is as pure inside as the open air outside, in spite of all the cells of closed wax, that, to a casual inspector, seem as if impervious. For it is known to observers of their manners and customs, that although a beehive has only one door to it, and no windows, all through the night and day from twenty to thirty bees fix themselves on the floor of the hive, and cause ventilation by flapping their wings. At night the number is increased, and in this the bees show their sagacity over many nations and peoples of the world, who believe night air from outside to be injurious, and ignore the fact that the night air of our sleeping-rooms, when these are shut up, is of the densest poison. The wing-flapping wafts the fresh air through the hive; and when four or five bees fall out exhausted, others take their places, so as to keep the air fresh. In the warm weather, when the honey-making becomes more vigorous with the opening flowers, the fanners are seen flitting outside of the hive in front of the door, to add to the air, as a captain of a ship claps on more sail when the exigences of his voyage demand it.

Seaside Drinking Water.—The unsatisfactory state of the water-supply in many of the smaller and some of the larger watering-places at home and abroad attracts increasing attention. Hastings and Margate are very badly placed in this respect. But is it not possible that the deductions from chemical analysis have sometimes been a little too severe? The presence of chlorine in such water, obviously proves nothing but an infiltration of sea water. But the water is sometimes condemned on the evidence of organic carbon and nitrogen found by Frankland's process; and it is not generally known that sea water, even when uncontaminated with sewage, yields a great deal of organic carbon and nitrogen. The extent to which infiltration of sea water has taken place can be measured approximately by the chlorine, and this enables a correction to be applied to the carbon and nitrogen. In chalk waters the presence of nitrates affords no evidence. On the other hand, the albuminoid ammonia affords a valuable indication, as pure sea water yields almost none.

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

The Body and its Structure

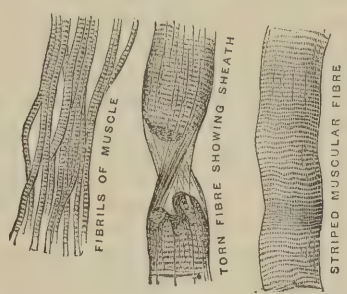
"The proper study of mankind is man."—*Pope.*
"What a piece of work is a man!"—*Shakespere.*

NO. XX.—MUSCLES AND THEIR WORK.

By A. J. Manson.

"Muscle" was shown in our last article to be that tissue of the living body by aid of which all ordinary movements are executed. We also saw that many movements connected with the circulation of the blood, digestion, the expression of the emotions, &c., owed their origin and existence to the work of muscles. It now remains for us to regard muscles from that point of view which seeks to note the details of their structure and build. In such an inquiry we may discover that certain familiar facts of everyday life may materially assist us in gaining an adequate knowledge of what muscle is, and what muscle does.

When we examine closely a slice of cold roast-meat as it lies on our plate at table—for beef is the "muscle" of the ox—we may readily see that it consists of a number of coarse fibres, closely packed together. The more "stringy" the meat, the larger and the coarser are these "fibres."



Fibres of Voluntary Muscle (magnified).

Now, when these "fibres" of a muscle are narrowly scrutinised, they are seen in reality to consist each of a bundle of fibres. The anatomist calls the bundle a *fasciculus.* By aid of a little care, it is easy to tease out such a bundle of muscle into its component fibres. We know that the size and number of the bundles of fibres in a muscle vary with the muscle itself. In the hip-muscles, and in the *deltoid* muscle of the arm the bundles are large and coarse; while in such a muscle as the *gracilis* the bundles are of finer nature. Again, the number of fibres contained in a bundle is subject to variation. Some bundles contain a greater number of fibres than others, and as we may now note, there are two kinds of fibres and two corresponding varieties of muscles to be found in the bodies of man and the higher animals at large.

The first kind of muscular tissue met with in the body is that represented in the muscles of the limbs, face, and trunk generally. These are *voluntary muscles*, that is to say, they can be brought into action at the *will* of their possessor. The power of "doing as we like" really depends on the property possessed by this first series of muscles of responding to our will. When we wish, say, to write, to walk, to raise the arm, or to perform any similar action, the appropriate muscles are brought into play through the stimulus given to them by brain and nerve. We "will" to perform a particular action, and we are enabled through the nervous guidance obtained from the brain to execute the act. Hence the term "voluntary"

muscles is a highly appropriate one in this light and aspect of their action.

The second set receives the name of *involuntary muscles.* These muscles are found in the stomach and intestine, in the walls of the blood-vessels, and in other situations. They act independently of the will. Those of the stomach, for example, contract when food enters that organ, and in health we are not only unconscious of their action, but when it has once been set going we have no power of causing it to cease. The heart itself is an involuntary muscle, seeing that we have no command over its movements, but, as will presently be shown, the muscular fibres of the heart are akin in their nature and structure to the fibres of the voluntary muscles, and do not resemble those of the muscles that lie outside the command of the will.

Anatomists have divided the muscles of our frames into *striped* and *unstriped* muscles. The "striped" (or *striated*) muscles correspond to all the voluntary ones of the limbs, head, and trunk generally; and the heart falls into this first category because its fibres exhibit a striped appearance. The second class is that of the *unstriped* (or non-*striated*) muscles. All the involuntary muscles (with the exception of the heart) belong to this division; and we must now proceed to note the characteristic features of each class.

The *unstriped muscles* have their fibres collected into "bundles," and they thus resemble their "striped" neighbours. These "unstriped" muscles, however, never form such well-defined masses as do the striped muscles of the limbs. They are of a paler red colour, and they are found to cross and to interlace one with another when, as in the stomach, they form part of the wall of a cavity or hollow organ. Their individual *fibres* are of large size, and are pale or colourless, varying from the $\frac{1}{3500}$th to the $\frac{1}{7000}$th of an inch in diameter. The most accurate view of each fibre in the unstriped muscle is that which regards it simply as a long "cell." We have already seen that "cells" are the units of the body's structure, and muscles would therefore appear to present no exception to the rule that it is upon "cells" that the work of the body naturally falls.

The "striped" muscles include, as we have seen, all the ordinary muscles of the body, together with the heart. These fibres are cylindrical in shape. They vary in breadth from the $\frac{1}{400}$th to the $\frac{1}{2400}$th of an inch. In length they vary from an inch and a half to much more diminutive proportions. Here again each fibre is regarded simply as a peculiarly modified "cell," and we certainly know that each fibre-cell is formed out of the primitive *protoplasm* or "matter of life," which represented the bodily substance in the early days of its development. Each fibre has a delicate sheath named the *sarcolemma*, (see Fig.) and imbedded in the substance of the fibre we may note certain solid particles—the *nuclei.* The matter of the fibre itself is named the *sarcous substance*, and it is to the peculiarities of this latter material that the "striped" fibres of the muscles we use in ordinary life owe their special characteristics.

When we microscopically examine the fibre of a "striped" muscle, and throw the light through it, we see that it is crossed by stripes of dark and light character, which alternate with one another (see Fig.). This division into light and dark elements is best seen in the muscles of some lower animals, such as the insects, although they are observable clearly enough in the striped fibres of man. It is this alternation of light and dark bands in the fibre which has procured for it the term "striped." The fibre-substance is thus seen to consist of two distinct kinds of elements,—dark, and light. The former refract the light doubly, while the latter refract it singly; the striped appearance being thus produced. But a fibre of striped muscle also shows a tendency to split up crosswise into smaller parts, called the *discs* of the fibre. And when the fibre has been soaked in strong spirits of wine or in chronic acid, it may be teased out lengthwise into smaller fibres called *fibrils* (see Fig.). As has well been remarked, if a fibre could be divided crosswise and longwise at the same time, we should at last get a number of square pieces or particles, of which we might regard the fibre as having been composed. Be this as it may, we may see in the fibre of a striped muscle, simply a structure which has undergone a much higher development and elaboration than its neighbour, the unstriped fibre.

The fibres of striped muscles do not, as a rule, divide; but the muscle-fibres in the tongue and lip and those of the heart branch and unite together. Muscles grow by the increase of their individual fibres. The fibres of the adult are longer than those of the child, and it is also tolerably certain that new fibres may be formed in muscles by the splitting lengthwise of already-existing fibres.

We have to note in our next paper the functions and disposition of some of the principal muscles of the body.

Health in Classic Times.—As might be expected, it is to the Father of Medicine, the great Hippocrates, that we owe the most of what we have left of Greek hygienic literature, although we must admit that even in Homer there are traces of hygienic knowledge, and that there the disinfecting powers of cleansing fires of sulphur are fully recognised. Another name that deserves remembrance is that of Xenophon, whose triumphant retreat was not less a hygienic than a military triumph. Nor ought we to omit the name of Herodicus, the first to introduce gymnastics on scientific principles, not only as a curative, but also as a preventive measure. The myth which makes Health, or Hygieia, the daughter of Asklepios (whom we call Æsculapius), no doubt arose from an instinctive perception of the value of medical science in preserving health. The famous line of Homer, which is thus rendered by Pope—

> A wise physician, skilled our wounds to heal,
> Is more than armies to the common weal,

shows the estimation in which the military surgeons of those days were held. Would that modern commanders had an equally just and appreciative estimation of the services of the best-abused but most beneficent of professions!

Tooth-wash.—Tooth-washes prepared with soap-bark as a base are not injurious to the teeth. Among the published formulæ, we select the following, giving the proportions according to Hager:—*Bennet's Tooth-wash*—Quillaia, in moderately coarse powder, 20 parts; glycerin, 20 parts; diluted alcohol, 9·5; oil of gaultheria, 9·5; oil of peppermint, 20·0. Macerate the quillaia with the glycerin and 180 parts of diluted alcohol, and enough of the oils to flavour the mixture, for twenty-four hours, occasionally agitating. Then filter and add enough diluted alcohol to make the product weigh 200 parts. *Meyer's Tooth-wash.*—Quillaia, in moderately coarse powder, 50 parts; peppermint water, 300 parts; alcohol, 300 parts. Macerate for a few days, then add cochineal, powdered, 1 part; peppermint water, 100 parts; glycerin, 100 parts; oil of gaultheria, 1·5 parts. Again macerate during the day, occasionally shaking. Finally add enough peppermint water to make 1,000 parts. Lastly filter.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR MEDICAL NOTEBOOK.

EASY HINTS FOR THE TREATMENT OF COMMON COMPLAINTS.

Loss of Voice in Singers and Speakers.—For this affection Dr. Corson recommends the patient to put a small piece of borax (two or three grains) into the mouth and let it dissolve slowly. An abundant secretion of saliva follows. Speakers and singers about to make an unusal effort should the night before take a glass of sugared water containing two drachms of potassium nitrate (saltpetre) in order to induce free perspiration. In similar circumstances this gargle may also be used :—℞ Barley water, six ounces ; alum, one or two drachms ; honey, half an ounce. Mix, and use as a gargle. Or, again, an infusion of jaborandi, made by putting two scruples of the leaves in a small cup of boiling water, may be drunk in the morning before getting up. The free sweating is said very quickly to restore the strength of the voice.

The Treatment of Poisoning by Chloral Hydrate.—Chloral has, unfortunately, come prominently to the front as a drug, taken indiscriminately, often without medical sanction, and in doses of poisonous nature. It is useful, therefore, to bear in mind the chief facts involved in the treatment of cases of poisoning by chloral. The object should be to overcome the tendency to death. First evacuate the contents of the stomach ; then treat according to this scheme :—To stimulate heart : Caffein citrate, strychnia, digitalis, atropia, brandy (by the skin and by the bowel), amyl nitrite (inhalation), carbonate of ammonia (injected into a vein). To maintain temperature : Wrapping in blankets, hot bottles to feet and body. To stimulate respiration : Electricity (applied to phrenic nerve), oxygen (inhalation). To clear the mind : Shaking, talking, douche to head, strong coffee *by the bowel.* Never give beyond 1-10 grain of atropia in all. The pulse, not the pupil, should be the guide as to when enough has been given. Strychnia may be given freely, 1-20 grain, followed by 1-30 or 1-40 grain or even more in an hour's time if no improvement shows itself, should be given subcutaneously. If the dose of chloral has been large, the strychnia may be used in larger doses.

Spiders' Webs as a Remedy in Ague.—This old remedy, remarks a medical contemporary, seems again to be coming to the front. In the *Gaceta Medica* of Seville there is an article upon the subject, and also in the *Correspondencia Medica.* In the latter journal 93 cases are mentioned, and Dr. Oliva gives 26 more in the *Gaceta Medica.* Of these, 22 were cured with the powdered web, two with the tincture and the powder, and the remainder with the tincture alone. The web is prepared in the following manner. It is gathered with great care, and is shaken to remove the dust, washed, dried in the sun, and powdered. The powder thus obtained is of a dark ash colour, without smell or taste, insoluble in water, and very slightly soluble in alcohol. From examination of the 119 cases which have hitherto been published, Dr. Oliva draws the following conclusions :—1. Arachnidina (cobweb) possesses the power of curing malarial fevers, and always when they are of a quotidian and tertiary type. 2. That when administered in the dose of two grammes to adults, or one to children, it generally stops the illness at the second fit. 3. Its action is less prompt than that of sulphate of quinine ; for this reason, until we get more data regarding the medicine, it should not be employed in pernicious intermittents. 4. That in consequence of its tastelessness it is more easy to administer than quinine, especially to children. 5. That its use lessens the tendency to relapses.

Bread Pills in Hysteria.—A case is recorded by Drs. L. Landouzy and S. Bellet of the sudden cure of hysterical contraction in a patient, by the administration of so-called *pilules fulminantes* or bread pills. The patient was 26 years old, and had been well until she was attacked with "St. Vitus's Dance" after fright at the age of 20. A second attack, which lasted five months, was caused by a fright at 24. A third attack followed vaccination on admission into the hospital a short time afterwards. This was followed by contraction of both legs, which for eight months rendered her completely helpless. She developed a craving for morphia injections, which were at last stopped, and in their place bread pills prescribed. The patient, having been warned of the violence of the remedy, took, with suicidal intent, four times the prescribed dose, and presently exclaimed, *Je sens encore les entrailles qui me bouillent, mais voyez mes jambes !* The patient left the hospital cured three weeks later.

The Medicinal Value of Vegetables.—A celebrated cookery-book discusses the medicinal value of vegetables, as follows :—"Asparagus is a strong diuretic, and forms part of the cure for rheumatic patients at such health-resorts as Aix-les-Bains. Sorrel is cooling, and forms the staple of that *soupe aux herbes* which a French lady will order for herself after a long and tiring journey. Carrots, as containing a quantity of sugar, are avoided by some people, while others complain of them as indigestible. With regard to the latter accusation, it may be remarked in passing, that it is the yellow core of the carrot that is difficult of digestion—the outer or red layer is tender enough. In Savoy, the peasants have recourse to an infusion of carrots as a specific for jaundice. The large sweet onion is very rich in those alkaline elements which counteract the poison of rheumatic gout. If slowly stewed in weak broth, and eaten with a little Nepaul pepper, it will be found to be an admirable article of diet for patients of studious and sedentary habits. The stalks of cauliflower have the same sort of value, only the stalk of a cauliflower is too often so ill-boiled and unpalatable that few persons would thank you for proposing to them to make part of their meal consist of so uninviting an article. Turnips in the same way are often thought to be indigestible, and better suited for cows and sheep than delicate people ; but here the fault lies with the cook quite as much with the root. The cook boils the turnip badly, and then pours some butter over it, and the eater of such a dish is sure to be the worse for it. Try some better way. What shall be said about our lettuces ? The plant has a slight narcotic action, of which every French old woman, like every French doctor, well knows the value ; when properly cooked it is really very easy of digestion."

Cod-liver Oil.—The following formula is useful in disguising the taste of this valuable medicine :—Cod-liver oil 96 grammes, iodoform 20 centigrammes, essence of anise four drops. The addition of the last two articles completely masks the taste and smell of the oil. Patients to whom the preparation is still repugnant may add to each spoonful of oil a very small quantity of salt, which modifies its taste and facilitates its digestion.

Castor Oil for Children.—The following is recommended as a pleasant form for children :—Castor oil, 1 drachm ; glycerine, 1 drachm ; tincture orange peel, 20 drops ; tincture of senega, 5 drops ; cinnamon water to make up half-an-ounce mixture.

COMMERCIAL CURIOSITIES.

Mr. Hillier, of Kew Museum, writes in *Land and Water:* Under the above heading, a few weeks back, "W. H." referred to the comparatively unheard of names of various products imported into this country. Probably the following few notes on several mentioned by him may be of interest to some of your readers :—

"Jowaree," the Indian name for the fruits of *Sorghum vulgare*, an annual extensively cultivated in Southern Europe, the Mediterranean region, Egypt, Syria, India, Guinea, and other parts of tropical Africa ; used as food corn.

"Piassava" or "Piassaba."—Brazilian names of the fibre obtained in Bahia from the leaf stalks of *Attalea funifera*, and in Para of that from *Leopoldinia piassaba*, the latter affording a finer and more valuable kind of piassaba. Both are used in the manufacture of street brooms, brushes, &c.

"Argols."—The concrete sediment or incrustation of wine vats from which tartaric acid is produced.

"Animi" or "Copal" is a hard resinous substance like amber, afforded by several tropical trees, the principal of which are *Trachylobium Hornemannianum* of Zanzibar, and *T. verrucosa* of Madagascar, used for making copal varnishes.

"Olibanum" or "Frankincense" is produced by two or more species of *Boswellia*, natives of E. Africa, used in the preparation of incense.

"Myrabolaus" or "Myrobalaus," the Indian name of the fruits of *Terminalia chebula* and *T. celerica*, common in India, Malay, Fiji, and other islands of the Pacific, largely imported into this country for tanning purposes, as also for dyeing black by calico printers. They are highly astringent.

"Kittool."—The name of the fibre obtained from the leaf-stalks of *Caryota urens*, a palm, native of Ceylon and India, used for making ropes, brooms, baskets, &c.

"Coir."—The fibre obtained from the husk of the cocoanut, from which the cocoanut matting and various other articles are manufactured.

"Orchella Weed."—The name of several species of *Roccella* (notably *R. tinctoria*), a genus of lichens valued for dyeing. Some samples in the Great Exhibition of 1851 were estimated to be worth £380 per ton. At one time the average annual imports of this dye weed amounted to 6,000 tons. It is found on the maritime rocks of hot or warm temperate regions.

"Danga" or "Gunjah."—The Indian name of the dried hemp plant, *Cannabis sativa*, an annual native of India and Persia, which is smoked like tobacco.

"Gumdadar" (? Dammar) is the name of the resin produced by species of *Dammara* belonging to the fir family, found in the Malayan Archipelago and New Zealand. It is used for many purposes. This name is also applied to several resin-producing trees of India, viz., *Hopea micrantha*, *Canarium strictum*, the latter affording the black dammar of commerce, &c.

"Silkworm Gut."—A speciment of this in the Kew Museum was obtained from silkworms fed upon the leaves of *Liquidambar Formosiana* of Formosa.

"Sandrac," or "Sandarach," is the name of the odoriferous resin of *Callitris quadrivalvis*, a native of Algeria and other parts of Northern Africa. It is used in varnish-making.

"Buchu," or "Bucku," is the Hottentot name for the fragrant leaves of three or more species of *Barosma* belonging to the rue family, natives of the Cape, where they are used in medicine and put in brandy to form Bucku brandy, and for various other purposes. They are used in this country in diuretic affections and for promoting perspiration.

"Cop Matee."—Probably this is a name for Maté, or Paraguay tea (*Ilex Paraguayensis*), a native of South America, where it is calculated the average annual consumption amounts to 8,000,000 lb. per annum.

Perhaps some other readers can enlighten us as to what "chindrons," "spada farnta," and "chussum" are.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

MEAT AND SCIENCE.

At a recent meeting of the Royal Society, an interesting communication was read, entitled a "Supplement to former Paper entitled 'Experimental Inquiry into the Composition of some of the Animals Fed and Slaughtered as Human Food'—Composition of the Ash of the Entire Animals and of certain Separated Parts." By Sir John Bennet Lawes, Bart., LL.D., F.R.S., F.C.S., and Joseph Henry Gilbert, Ph.D., LL.D., F.R.S., V.P.C.S.

In a former paper (*Phil. Trans.*, Part II., 1859) the authors had given the actual weights, and the percentage proportion in the entire body, of the individual organs, and of certain more arbitrarily-separated parts, of 326 animals —oxen, sheep, and pigs—in different conditions as to age, maturity, fatness, &c. They called particular attention to the wide difference in the proportion by weight of the stomachs and intestines in the three descriptions of animal; the proportion of stomach and contents being very much the highest in oxen, considerably less in sheep, and little more than one-tenth as much in pigs as in oxen. On the other hand, the intestines and contents contributed a less proportion to the weight of the body in oxen than in either sheep or pigs, the percentage by weight in pigs being nearly twice as high as in sheep, and more than twice as high as in oxen. With these very characteristic differences in the proportion of the receptacles and first laboratories of the food, the other internal organs collectively, as also the blood, contributed a pretty equal proportion by weight of the entire body, in the three descriptions of animal.

Ten animals had been selected for the determination of the chemical composition, namely—a fat calf, a half-fat ox, and a fat ox; a fat lamb, a store sheep, a half-fat sheep, a fat sheep, and a very fat sheep ; a store pig, and a fat pig. In these, in the collective carcass parts, in the collective offal parts, and in the entire bodies, the total nitrogenous (or flesh-forming) substance, the total fat, the total mineral matter, the total dry substance, and the water were determined; and the results were recorded and discussed in detail.

It was shown that, as the animal fattened, the percentage of nitrogenous substance decreased considerably, whilst that of the fat and of the total dry matter increased in a much greater degree. It was estimated that the portions of well-fattened animals which would be consumed as human food would countain three, four, and even more times as much fat as dry nitrogenous substance: and comparing such animal food with wheat-flour bread, it was concluded that, taking into consideration the much higher capacity for oxidation of a given weight of fat than of starch, such animal food contributed a much higher proportion of non-nitrogenous substance, reckoned as starch, to one of nitrogenous substance than bread. In fact, the introduction of our

staple animal foods to supplement our otherwise mainly farinaceous diet did not increase, but reduced the relation of the flesh-forming material to the respiratory and fat-forming capacity of the food.

Finally, the actual amount and the percentage of total ash in most of the internal organs and some other separated parts were given. It was shown that the percentage of total mineral matter, like that of the nitrogenous substance, decreased not only in the entire body, but especially in the collective carcass parts, as the animals matured. It was the object of the present communication to record the results of the complete analysis of the ashes of the collective carcass parts, of the collective offal parts, and of all parts of each of the ten animals. Forty complete ash analyses had been made.

As was to be expected, more than four-fifths of the ashes consisted of phosphoric acid, lime, and magnesia; these making up the largest amount in the ash of the oxen, less in that of sheep, and less still in that of pigs. Potash and soda were also prominent constituents. Assuming, for the purposes of illustration merely, that one of phosphoric acid was combined with three of fixed base, the ashes of the ruminants showed an excess of base; whereas, according to the same mode of calculation, the ashes of the pigs showed no such excess.

It was, unfortunately, only in the case of the offal parts of the pigs that the ash of the chiefly bony and that of the chiefly soft parts had been analysed separately. The results showed a considerable excess of acid, especially phosphoric, in the ash of the non-bony portions; presumably, in part, at any rate, due to the oxidation of phosphorus in the incineration. In further reference to the point in question, it may be stated that, although the oxen and sheep show a higher percentage of total nitrogenous substance than the pigs, yet, owing to the relatively small proportion of bone in the pigs, the amount of ash yielded from the non-bony parts is higher in proportion to that from the bones in their case than in that of the ruminants.

Comparing the percentage composition of the ashes of the entire bodies of the different animals, the chief points of distinction were that in the ash of the pigs there is a lower percentage of lime and a higher percentage of potash and soda than in the corresponding ash of the ruminants; there is a somewhat higher percentage of phosphoric acid in the ash of the pigs and of the oxen than in that of the sheep; and there is a higher percentage of sulphuric acid (and somewhat of chlorine also) in the ash of the pigs than in that of the other animals.

A table showing the quantities of total ash, and of each individual mineral constituent, in each of the ten animals analysed, was given. Not much stress was laid on the amounts in the particular animals analysed, as the actual weights and condition of animals coming under similar designations may vary considerably.

It was of more interest to consider the amounts of the mineral constituents in carcass parts, in offal parts, and in all parts per 1,000 lb. fasted live-weight, of each description of animal.

It was shown that a given live-weight of oxen carried off much more mineral matter than the same weight of sheep, and a given weight of sheep much more than the same weight of pigs. With each description of animal the amounts of phosphoric acid, lime, and magnesia are less in a given live-weight of the fatter than of the comparable leaner individuals. Of both potash and soda, again, the quantity is less in a given live-weight of the fatter animals. The same may be said of the sulphuric acid and the chlorine; in fact, in a greater or less degree, of every one of the mineral constituents.

It was estimated that the loss to the farm of mineral constituents by the production and sale of mere fattening increase was very small. It was greater of course in the case of growing than of only fattening animals. In illustration, the amounts of some of the most important mineral constituents removed annually from an acre of fair average pasture and arable land in various products were compared. Such estimates could obviously be only approximate, and the quantities will vary considerably. With this reservation it may be stated that, of phosphoric acid, an acre would lose more in milk, and four or five times as much in wheat or barley grain, or in hay, as in the fattening increase of oxen or sheep. Of lime, the land would lose about twice as much in the animal increase as in milk, or in wheat or barley grain; but perhaps not more than one-tenth as much as in hay. Of potash, again, an acre would yield only a fraction of a pound in animal increase, six or eight times as much in milk, twenty or thirty times as much in wheat or barley grain, and more than a hundred times as much in hay.

From the point of view of the physiologist, it would doubtless have been desirable that the selection of parts for the preparation and analysis of the ash should have been different, and more detailed. The agricultural aspects of the subject had, however, necessarily influenced the course of the inquiry; and the extent of the essential work had enforced the limitation which had been adopted. The results must be accepted as a substantial contribution to the chemical statistics of the feeding of the animals of the farm for human food.

The Uses of Boric Acid.—The acid is generally required in powder for medicinal uses, yet not always so, and therefore care should be taken to order it in powder when wanted in that condition. An order simply for boric acid will and always should bring it unpowdered. For many of its recent uses in medicine it is required in very fine powder, and such is the only powder that should be sold. With care, in a proper mill it makes a beautifully white light powder, entirely free from particles when rubbed between the finger and thumb, feeling very much like powdered soap. It is only such powder that will answer well in eye-surgery, or in general surgery for dressings; and solutions, when required, are most easily and best made from this powder. A solution saturated at ordinary temperatures contains between 4 and 5 per cent.; and from 10 grains in the fluid ounce up to saturation it is frequently used as an eye-wash, or to granulating and suppurating surfaces in general. It is a very bland and soothing application, whether applied in powder or in solution, relieving irritation and reducing suppuration. It is a very potent antiseptic, probably equal to salicylic acid, and is much less expensive; and its advantages over carbolic acid for some purposes are chiefly that it is odourless and more easily managed. For the preservation of hypodermic solutions, it is probably better than either salicylic or carbolic acids, though comparative experiments are still needed to determine this. In surgical dressings, it has the great advantage over carbolic acid, that it is not irritant nor poisonous in any quantity that has been applied. Not being at all volatile, however, it has no effect in cleansing or deodorising the air. It has been administered internally in large doses without any disturbing effects, but only by a very few observers, so that little is known of its internal uses.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE UNSANITARY HOMES OF THE RICH.

By C. F. Wingate.

(From the *North American Review.*)

I.

Sanitary science is one of the oldest of the sciences. The hygienic laws laid down by Moses and Hippocrates are to-day just as applicable as they were two thousand years ago, and only need adaptation to our complex civilisation. Nevertheless, progress in the practical application of sanitary principles has not been rapid. It has kept pace with the advance of knowledge, but this has, of necessity, been slow and disappointing. Until newspapers began to be widely diffused there was no means of popular enlightenment, and even now people are apathetic about hygienic matters, and neglect the "ounce of prevention," nowhere else so vitally important.

It is only thirty-five years since the first comprehensive health law was enacted in Great Britain; and it was not until the criminal blundering of the Crimean War, and the death of Prince Albert, that the English public were awakened to the need of sanitary reform. Much had been previously done to improve the condition of hospitals, prisons, and factories. Smoke nuisances had been abated, and graveyards in crowded cities closed. Domestic sanitation was, however, an unworked field, which is only now beginning to be cultivated. The principle laid down by Dr. Carpenter, that "the house is the unit of sanitary work," had not been accepted. Building details had been left to the architect; and it was not until medical men awoke to the alarming spread of zymotic disease, due to bad drainage, that people began to question the providential theory of disease, and to raise the warning cry, "Look to your drains."

The most surprising fact is, that while the evils complained of have been found in both city and country houses, and in the homes of rich and poor alike, yet they have been most destructive to life and health in the finest residences here and abroad. The same ignorance and thoughtlessness which led Peter the Great to select a flooded marsh as the site of his imperial capital, are repeated in the arrangements of the noblest European palaces. Viollet-le-Duc relates that he had occasion to visit the Tuileries with an old lady of the "ancien régime," who noticed with satisfaction what to him were insufferable odours from certain sanitary conveniences in the building, and said that they recalled to her the time before the Revolution when she was a maid of honour. After the death of Prince Albert, his usual study seat was found to be directly over a cesspool, whose emanations were undoubtedly the cause of his disease. The almost fatal illness of the Prince of Wales at Sandringham was ascribed to a like cause. The ancient palace at Darmstadt, where the Princess Alice was carried off by diphtheria, was afterwards found to have many leaky drains and unventilated cesspools. Within a year Bagshot Park, the newly built residence of the Duchess of Connaught, supposed to be perfect in its sanitary arrangements, has been discovered by Dr. Playfair to be filled with sewer-gas. These experiences of royalty show in the most vivid way how little attention has been given to the sanitary arrangements of the costliest and most palatial dwellings. Mr. Rawlinson, the eminent English engineer, declares that Belgravia is the worst sewered part of London, and that the drainage of the Government offices and official residences in Downing-street is so indescribably bad that he would rather resign than live there.

These statements are sufficiently startling, but they are no worse than the known facts about the finest residences in the United States. Much has been written and said of late years about the wretched homes of the poor of New York, their squalor, their filth, and the moral and physical degradation of their occupants. All are familiar with the harrowing descriptions of the barracks and slums in which a large proportion of the population of the metropolis live and in which so many of them die. Little, however, has been heard of the unsanitary homes of the rich; and it seems paradoxical to declare that the defects of the costliest houses on Murray Hill rival those of the tenements of Baxter-street. New York is the commercial centre of the country. The daily transactions of its clearing-houses mount up to millions. Its docks swarm with shipping from all parts of the world, and its warehouses overflow with merchandise from the Ganges, the Thames, the Golden Gate, and the Amazon. Millionaires jostle each other in Wall-street, and bonanza and railway kings are as common as blackberries there. To house the possessors of this wealth, the finest dwellings that architectural taste can design are being erected all over Manhattan Island, many of them of imposing dimensions, palatial in their adornment, and seeming to lack nothing to promote comfort, enjoyment, and health. Yet I venture to say that a large number of these houses are mere whited sepulchres, and their luxurious inmates are exposed to constant risk of disease and death. The story of the rich man who tore down his barns and built greater ones, has a parallel in hundreds of cases, where the possessor of wealth, acquired by years of persistent labour in mining, manufacturing, commerce, or speculation, comes to New York to enjoy his gains, buys a mansion, adorns it in æsthetic style with costly frescoes, rich upholstery, elaborate carving, and bric-à-brac, and then has some member of his family stricken with sickness, due to sanitary defects in or near the dwelling.

An analysis of the population of Paris just published, shows that medicine, in its branches, supports 18,000 persons; the branches of course including chemists and all compounders and vendors of medicine.

Dust in the Eyes.—And up the nose! We wonder would it be "putting people to an enormous expense" if the contractors who—occasionally—remove the dust from bins where it has been long left to become putrid, were required to provide some sort of covers to their carts! At present it is something worse than a nuisance to have these carts lumbering and jolting over the stones in the streets without any sort of cover. A "smell" means the application of particles of odorous material to the mucous membrane of the nose. It follows that, when the horrible stench which rises from the contents of these carts makes itself known to the passer-by, he actually takes into his nasal cavity a certain amount of the putrefying animal and vegetable matter which is so offensive. The consideration is not a nice one. A very simple cover, consisting of two shutters falling together in the centre, would suffice to prevent the wind from wafting the fetid and probably morbific products of desiccated organic matter about. Will any sanitary authority consider this?—*Lancet.*

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

Death from Cold in Mammals.—The behaviour of protoplasm under the influence of different degrees of temperature is still insufficiently known. We are familiar with the general facts that excessive heat or cold brings about death, and that fever is attended with increased tissue changes; and in some measure we understand the kind of way in which this happens; but that is all. MM. Richet and Rondeau have studied the influence of cold on some mammals. They have adopted a method by which the temperature of the animal has been gradually lowered. Dogs resist cold so well that no experiments were made on them. Rabbits were chiefly employed in these investigations. These animals were shaved and surrounded with flexible pewter tubes, through which cold water was made to circulate. When the temperature of the body was lowered to 23° C. respiration began to be ineffectual. The rhythm was not modified; but the amplitude of the inspirations was chiefly diminished. The functions of the nervous system were much abated when the temperature fell to 17° C.; they were not, however, abolished. Reflex movements were obtained, even when the temperature sank to 15° or 14° C; and the observers believe that the excitability of the nervous system disappeared not directly on account of the cold, but probably from arrest of the circulation. Spontaneous movements disappear before the reflex acts. The reflex from the cornea of the eye went before those from the lower limbs. At 16° C. the reflexes were remarkably slow, and like those in animals with a cold circulation. Sensibility to pain was not abolished even at the temperature of 16° C. Cold gradually slowed the cardiac action. The form of the contraction at 17° C. was like that of the heart of the tortoise. Systole (or contraction) commenced at the auricles, and by a slow vermicular movement passed on to the ventricles. Even although death had been apparent for half an hour, the animal could be restored to life; so that vitality can be recalled half an hour after the cessation of respiration and circulation. When the temperature was 19° C. it took more than ten minutes to asphyxiate the rabbit by blocking the trachea. We may conclude from this that tissue change is correspondingly slow. The same animal was suffocated in four minutes at a temperature of 32° C. MM. Richet and Rondeau commented on the similarity between the vital processes of hibernating animals and those of rabbits thus experimented upon, in which a condition, so to speak, of artificial hibernation may be induced.—*Lancet.*

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Animal Electricty.—Dr. McKendrick, so well known for his physiological researches, delivered an able and interesting lecture on Galvani and Animal Electricity before the Southport meeting of the British Association, on Monday last. In summing up, the lecturer said that all these electrical changes were really expressions of the vital changes occurring in living tissues under the action of stimuli. It was no part of the functions of nerves, muscles, or of the retina of the eye to produce electrical currents under the action of their relative stimuli; but such currents indicated chemical changes in the organs or tissues. For example, the contraction of a muscle is a movement following or consequent upon many chemical changes, among the results of which were the production of heat and differences of electrical potential. Thus, there was no special production of electricity except in the cases of electrical fishes, and possibly of some other animals. In most animals, including man, the production of currents was an incidental phenomenon, indicating chemical operations and nothing more. Besides, the currents so produced were feeble and evanescent, and bore no relation to the general well being. Consequently, all attempts to influence the living body by magnets had no rational basis. It need hardly be said that the so-called phenomena of animal magnetism are of an entirely different kind from those discussed. These are of a subjective character, dependent on peculiar states of the nervous system, having nothing whatever to do with electricity or magnetism; but still in a sense they are phenomena as real as those of physical science. Their subjective character, however, renders them specially difficult of investigation, and consequently they are more liable to fall into the hands of the charlatan.

✣ ✣ ✣

Poisoning from Cobwebs.—In cases of cut fingers and similar wounds it is not advisable to apply cobwebs. At Geldern a servant-girl did so lately, and an extensive swelling of the finger and the hand generally ensued. It was found necessary to amputate the finger, otherwise the girl would have died from blood-poisoning.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

THE MICROSCOPIC STRUCTURE OF THE BODY.

Manuals for Students of Medicine: Elements of Histology, by E. Klein, M.D., F.R.S. Illustrated with 181 Engravings. (Cassell & Co., Limited, 1883. Price 6s.)

Although this handy volume forms one of a series intended for the instruction of medical students, it will nevertheless also appeal to the intelligent general reader

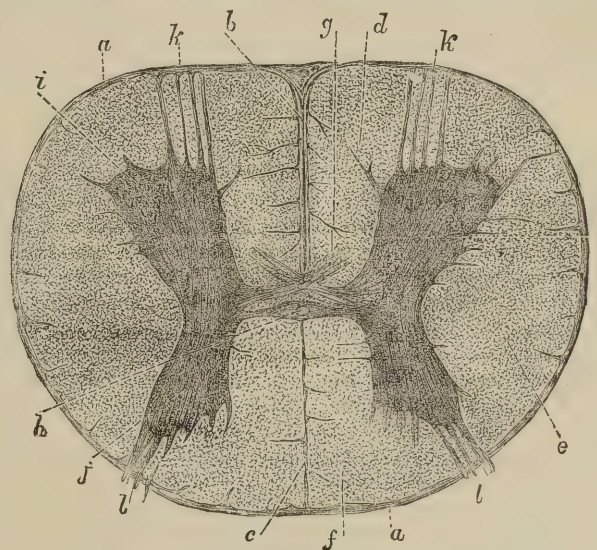

Fig. 1.—Magnified Cross Section of the Spinal Cord.

as a manual of instruction in the minute build of the body. The number of persons who use the microscope as a pleasure-giving pursuit in ordinary life is yearly on the increase. Many persons possess, not merely a microscope

of sufficient power wherewith to show the chief facts of bodily structure and to demonstrate the main points of interest in the form of lower animals and of plants, but also exhibit the skill necessary for the display of microscopic objects and for their due preservation in the home-museum of curiosities. A microscope is a great educator, when properly used; and there are none who do not enjoy a peep through the veritable wonder-glass which shows us how nearly the infinitely little approaches to the infinitely great. There can be no higher or more interesting method of training the young in the facts of life and nature than that of teaching them the fashion in which living beings are built up from and by apparently small and insignificant particles. Doubtless some experience and training are necessary to enable the student to perfectly understand what he sees; but the skill which is necessary is not difficult to acquire, and experience in the methods of microscopical inquiry is by no means the exclusive property of the professional mind.

Dr. Klein's book will be welcome to a larger class of readers than is included under the designation of "medical students." The book is not merely a masterpiece of clear writing, but the numerous engravings which adorn its pages

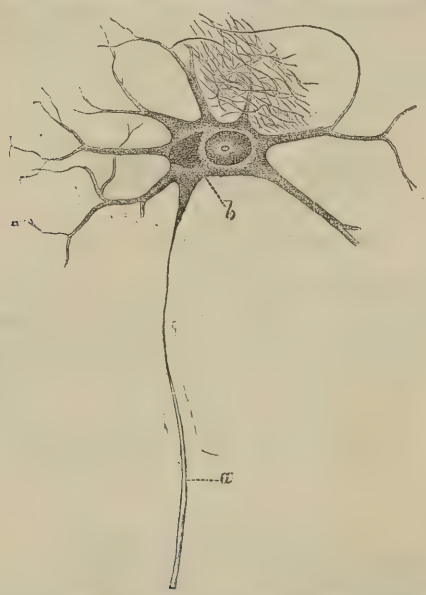

Fig. 2.—A Nerve Cell from the Spinal Cord (magnified).

assist the reader in the highest degree in comprehending at once the beauty and the interest of the study of the minute in living beings. To understand how the processes of life are carried on, it is absolutely necessary that we should acquire a knowledge of the microscopic structure of the living body. After all, the essentials of life's processes lie in the minute ways and works of living things. In knowing how the gastric juice of the stomach is secreted, how the saliva or "water" of the mouth is made, how bile is formed in the liver, what the brain is and how nerves act—to know, in short, how all the processes of life proceed—a knowledge of what the microscope teaches is absolutely necessary. If any book can aid the student of physiology in acquiring such knowledge, the volume before us will serve such an end. Dr. Klein is everywhere a trustworthy guide to the mysteries of human structure; and his book is one of the most interesting which has of late years been issued from the scientific press.

In illustration of Dr. Klein's method, we may note his description of the spinal cord—the great central nervous trunk which lies securely protected within the backbone, and which is really in one sense a continuation downwards of the brain itself. As shown in Fig. 1, a cross section of the spinal cord teaches us that it consists of an outer part of *white matter* (*d*, *e*, *f*, *g*), and an inner part of *grey matter* (*i*, *j*). The latter consists of *nerve cells*, and the former of *nerve fibres*. It is the nerve cells which originate the

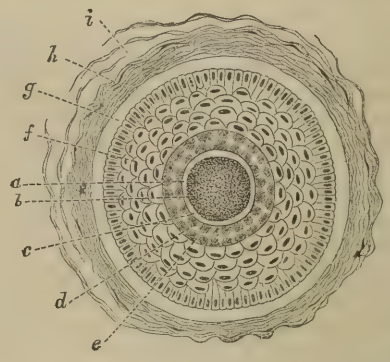

Fig. 3.—Cross Section of a Hair and its Sac.

nervous impulses, while the nerve fibres convey these impressions. In Fig. 2, a *nerve cell* from the grey matter of the spinal cord is shown. Here we see the cell containing pigment or colouring matter (*b*), and giving off processes, one of which (*a*) in time becomes the main part of a nerve. These nerve cells are, in fact, the batteries of the nervous telegraph system, while the fibres are the wires. The spinal cord itself is enveloped in membranes corresponding to those which invest the brain. The innermost layer is the *pia mater*, shown at *a*, Fig. 1. We also see, in this cross-section of the spinal cord, how that structure is nearly completely divided into two distinct halves. Within it the grey matter (*i*, *j*) assumes the shape of a capital H, and through the cross-part (which unites the two "limbs" of the letter) we find a small canal (*h*) running throughout the length of the cord. It is through this wonderful structure that the nervous impulses shoot to and from the brain; while we know that the spinal cord itself, when detached from the brain, is able, by means of its "nerve-cells," to act as an independent nervous centre. Through-

Fig. 4.—Structure of Dog's Salivary Gland.

out his description of the entire nervous system, Dr. Klein is clear and terse. It is no slight aid to the student of physiology to discover in such a volume as that before us a mass of exact information regarding a most abstruse part of the anatomy and build of our frame.

Passing now to a widely different part of our frames, we arrive at the skin and its appendages, the hairs. Here (Fig. 3) is a cross section made by Dr. Klein, through a human hair and the "follicle," or sac, in which it is developed. In such a view, we see outside all the *fibrous coat*

(*h*) of the hair-sac. Inside this coat we find what is called the *glassy membrane* (*g*), and then succeeds the *outer root-sheath* (*f*), which is the principal part of the hair-sac. The *marrow* of the hair is seen at *a*, its *bark* at *b*, and its skin, or outer layer, at *c*. A hair is thus seen to be a highly complex structure, and to exhibit an arrangement of parts such as the uninitiated observer would hardly bargain for. The patient industry of science is, however, equal to the demonstration of the foregoing parts in the hair-structure, and the development and growth of the hair become clear to us when the exact nature of the structure has become known.

The *salivary glands*, or those which manufacture the *saliva* or "water" of the mouth, present an interesting structure. As shown in Fig. 4, where a section has been made through part of a salivary gland of the dog, we are enabled to see that the gland is composed of collections of cells arranged in clumps. It is these minute "cells" which manufacture the "water" of the mouth, and which, taking the blood as their raw material, elaborate its elements into the familiar secretion of the mouth.

Technical although this volume may appear to those who have not yet advanced beyond the mere rudiments of physiological science, we deem its presence on the book-shelf of the microscopical student an absolute necessity. Many points in the history and appearance of living tissues and organs will become clear after the lucid explanations of Dr. Klein are studied. To all who feel interested in the part played by "cells," "fibres," and other elements in the formation of our frame, this volume will teem with facts which form the only sound basis for a knowledge of the more intricate problems of the living body.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

LECTURES TO THE MASSES.

Sir,—By the kindness of the Trustees of the Gilchrist Fund, the Committee of the Royal Victoria Coffee Hall have been able to arrange for the delivery of six penny science lectures by eminent lecturers on Tuesdays, beginning on Oct. 2. The success of the Gilchrist lectures in Scotland and the North of England is remarkable, thousands of operatives being attracted by them. In some cases some of the audience have followed the lecturer from one town to another to hear the same lecture again. The Committee are, therefore, anxious that lectures such as these, which are rarely within reach of London working men, should be made widely known beyond the circle of the usual frequenters of the Hall, and the Honorary Secretary would be glad to hear from any one willing to help by getting a poster hung up, or hand-bills distributed among working men in districts within reach of the Vic.

The lectures (which are to be illustrated by oxy-hydrogen lanterns, and in the case of the first two by experiments as well) are to be as follows:—

Oct. 2 & 9. (Two lectures) by William Lant Carpenter, Esq., F.C.S., on "Ice, Water, and Steam."

Oct. 16. P. N. Carpenter, Esq., on "Life under the Ocean Wave."

Oct. 23. E. H. Knobel, Esq., Sec. R.A.S., on "Comets."

Oct. 30. C. A. V. Conybeare, Esq., on "The Rights and Feelings of an Animal."

Nov. 6. Dr. B. W. Richardson, M.D., LL.D., F.R.S., on "Food and Feeding."—Yours faithfully, Emma Cons, *Hon. Sec.*

Royal Victoria Coffee Hall, Waterloo-road, Oct. 4, 1883.

"BATHERS' CRAMP."

Sir,—How are the public to be better informed if the teachers are ignorant of a subject which they pretend to explain? An article has just appeared with the above heading in one of your medical contemporaries. Now, in the first place, there is no such thing as "bathers' cramp," that is to say, that what is commonly understood as "cramp," viz., a contraction of the muscles, is not peculiar to bathers and swimmers, in the same sense as that in which we speak of "scrivener's," or "writer's," cramp, a term which is perfectly intelligible, the affection being due to excessive use of the fingers in writing. It has been stated on very good authority that it is a popular error to ascribe the majority of drowning accidents to "cramp;"—that is mostly the conclusion that is arrived at in cases in which the real cause of the fatality is not inquired into. But it has been explained that various other dangers threaten ignorant or careless persons who enter the water under conditions dangerous to health and life.

A letter appeared in the *Times* a few weeks ago from the hon. sec. of the London Swimming Club, pointing out the mistake concerning "cramp" as a common cause of drowning. That letter was followed by two or three others from writers who entirely endorsed those views.

The writer of the article in the medical journal alluded to, who adopts the misleading term "bathers' cramp," refers, in the course of his remarks, to various kinds of cramp—for instance, "true muscular cramp of the classical kind," "muscular spasm," and "cramp in the ordinary acceptation of the term." Well, I think the last-named is the only kind of "cramp" that should be described by writers who wish to caution reckless bathers and swimmers against more serious dangers. The ordinary cramp is the only kind recognised and understood by the public generally—viz., the seizure, mostly in the lower extremities, from contraction of the muscles; and this I have been told by expert swimmers does not impede their movements in the water; so when an unfortunate person goes down "like a stone" in the water, apoplexy is most probably the cause, or collapse of the lungs, or congestion of some other organ. Let us leave "classical cramp" to the ancients, or to the medical schools. And as for "true" cramp, I was not aware that there was a *false* kind, in the same way as "pseudo-croup," &c. But the ordinary cramp is what the public understand, and "bathers' cramp," as a distinct affection, has no existence. I should say, before concluding, that the attention of the *Lancet* was called to the subject, and a very sensible article appeared in that journal two or three weeks ago, entirely upholding the views herein expressed concerning the cramp fallacy.—I am, sir, faithfully yours,

M. A. B.

TOILET RECIPES.

Sir,—In reference to the recipes for various toilet preparations on pages 394 and 395 of your journal, will you permit me to point out for the benefit of your readers that those for the Rose and Almond Bandoline, Crême de Mauve, Hungarian Cosmetic (Pomade Hongroise), Bay Rum, Amandine, Olivine, Almond Paste (properly called Honey and Almond Paste), Rose Milk (Milk of Roses), Frangipanni Sachet Powder, Heliotrope Sachet Powder, are all to be found, expressed in simple English weights and measures, in Piesse's "Art of Perfumery." It is also advantageous to note that the groups, occur in the same order, as in most cases do also their constituents, whereby reference is facilitated. I am now engaged in re-editing this volume, the last edition of which was produced in 1879, under the supervision of my lamented father, its author.—Your obedient servant,

Charles H. Piesse, F.I.C.,
Oct. 5, 1883. Public Analyst and Physician.

QUERIES AND ANSWERS.

GENERAL.

B. Grimstone.—There is no such person. The name is only an assumed one.

A. K.—The man is a "quack," pure and simple. No respectable medical man advertises himself by means of prurient pamphlets distributed in the streets.

C. Cargill.—See Dr. Cathcart's article in Health, No. 26.

Amor.—The term pollen is applied to the fertilising yellow dust of flowers, matured in their stamens.

Beechy Head.—Evidently a mistake, for which the writer of the article alone is responsible. Write to the editor of the magazine.

Cambria.—Regarding fermentation, read Tyndall's "Floating Matter of the Air."

M. Sanderson.—The belt you send is another of the magnetic frauds that were exposed in Mr. Carpenter's second and third papers (Aug. 24 and 31). It can produce *absolutely no* electricity when worn on the person. Galvanic and electric is an utter misnomer. Mr. Carpenter inquires where it was bought and what it cost?

SANITARY.

B. Alcock.—Hinckes Bird's plan was described in "Notes by the Way," in last number of Health.

Cairns.—Try "Sanitas" fluid in the bath.

Kurious.—Due to the germs of the fungus passing into the rain water, and afterwards vegetating from drippings in the wall.

James Allan.—Inquire of the manufacturers.

Constant R.—The decision has not been rescinded, and therefore stands legally as a precedent.

Ergo.—For a few days at most.

Christchurch.—It is still a disputed point whether cows fed on sewage-farms may give contaminated milk. In the absence of definite information, better to avoid any risk. The water you mention is decidedly suspicious. The worm-infection is either through unwashed vegetables or through drinking a bad water directly.

Cathcart.—Parke's "Practical Hygiene;" Wilson's "Healthy Homes" (Churchill); Corfield's "Health" (Kegan Paul & Co.); the "Health" Primers of the Society for Promoting Christian Knowledge. If this list is not sufficient, we can enlarge it for you.

An American.—Address your inquiry to the Medical Officer of Health of Sheffield. The Health Returns will likely be published in the local newspapers; but the medical officer will afford all necessary information.

R. Somerville.—We do not know the publication you speak of. Can you not afford us some definite clue to its author?

MEDICAL.

L. F. Clow.—The article directed that the 5 per cent. solution should be diluted so as to be no stronger than 1 per cent. nor weaker than ½ per cent. See foot of page 359 Health, where full directions are given, and where a couple of teaspoonsful of the solution are to be diluted with four or five times the bulk of water. The directions are perfectly clear.

Farnworthian.—Certainly; you will regain health and strength. Fear nothing, and in addition to the tonic (which should not be taken continuously) remember to try the effect of cold sponging, generous diet, and exercise. Have no fear of your future.

Age Twenty.—Some irregularity of living (chill as often as not), too much exercise (or too little), stimulants, &c. Take a little "Æsculap" water every morning, attend to cleanliness, and avoid chills.

R. C. B.—A common case of indigestion. Take the aperient water recommended to "Age Twenty" above; give up tea and coffee; see to the ventilation of your room; and take rest. After food take a little Morson's "Pepsine." Write again if not relieved. See also to your teeth.

Scotsman.—See replies to "Rab" in No. 25 Health; also to "Victor" in No. 26. Get rid of your fears, and know that time and care will accomplish your cure. Keep out of the way of quacks.

Alpha is informed that according to our invariable rule (stated weekly in our notices to correspondents) queries addressed to us on postcards are consigned to the waste-paper basket. Re-address the inquiry per letter.

Matthias.—A belt would be of no service in the case you name. Read reply descriptive of asthma and treatment to "W. Garth," in Health No. 20. Yours is a case for the wise selection of suitable spectacles. (Write to Mr. Browning, 63, Strand, London, for his method of suiting the sight.) Give up night-work for a time.

Remorse.—See advice to "Scotsman" above. Be cheerful and live wisely, as directed. You will soon recover your health. Write again if not improved.

D. W. Lowe.—Consult a good aural surgeon. The discharge from the ear is probably connected with inflammation of the drum. A consultation may relieve you by putting you in the way of complete cure. Inquire at any of the leading surgical instrument-makers in London regarding the appliances (Weiss, 62, Strand; Pratt, 43, Oxford-street, W.; or Krohne & Seesmann). By seeing an ear-surgeon first, you may be saved the expense of an instrument.

St. Mungo.—We cannot advise you to have anything to do with the phosphorus-preparations you name. We should advise in your case, the taking of a little Morson's Pepsine (as directed on the bottle) with your food. Give up tea and coffee for a time, and try milk instead. If not improved write again.

Rural.—Give up all stimulants, and let your dietary be light and nutritious—fish, milk, eggs, &c.—and follow advice given to "St. Mungo" above. A teaspoonful of Fellows' Syrup of the Hypophosphites, taken thrice daily before food in a wineglassful of water, is likely to benefit you.

W. Wadely.—You should have the boy examined by a competent physician, who alone can determine, by such examination, the exact nature of the "fits." We counsel you to seek such advice as soon as convenient, inasmuch as proper treatment, immediately applied, may benefit or cure him.

H. Aldons (This is the nearest we can go to your signature).—Yes, the advice to "Fylde," may be followed in your own case. We cannot undertake to send copies of Health to correspondents.

Dolly.—See paragraph regarding removal of freckles in Health, No. 26, page 6.

W. B. J.—See advice to "J. Sharp," in present number of Health. Take the tonic recommended to "J. F. J.," below. Cold sponging should also be tried.

Tristis Hermis.—We fancy your general health must be out of order. Why not try the effect of a little cod-oil and a fatty dietary at large? The lady you name has certainly undertaken a work of magnitude. We shall look curiously to see if, on publication, it meets her description of its scope. The "muscle-beating" is good in theory, but will require to be carefully carried out in practice.

Benedictus.—1. You entirely mistake the nature of the secretion you speak of. It is entirely harmless. You should take the tonic recommended to "J. F. J." in present number of Health, and have full confidence in your future. Yours is a common case, which time and care will entirely cure. You are only a little excitable and nervous, and your general health is below par. The tonic recommended will do you good. 2. Thanks for the cutting. The coroner's inquest seems to have been rather a confused affair. Why was there no medical evidence? It seems the patient was choked, not by the oyster, but by false teeth, if the newspaper report is to be believed.

A. J. Shaw.—Your teeth appear to be the primary cause of your ill-health. Consult a good dentist. Nothing can be gained by your attempts to obtain relief in any way short of having the teeth put right by professional aid. Many a case of obstinate ill-health owes its origin to neglected teeth.

Edinburgh.—In such a case as yours, great care must be exercised. The medical advice you had was of the best description. We imagine from your description that when your general health becomes re-established the attacks you speak of will disappear. The attacks depend on the same condition of your nervous system to which the paralysis is due. Under the circumstances, therefore, we regard your case as one in which careful watching by a medical man is necessary. Electricity, judiciously applied, might do good.

J. Sharp. Don't alarm yourself; you will get quite well in time, and, indeed, at present you suffer from no disease. Sleep on a hard mattress, take no fluids late at night, moderate exercise, cold sponging each morning, and the tonic recommended to "Rural," in present No. of Health. Don't get in the way of quacks.

Caput.—1. Read our papers on the "Hair," contained in the first three monthly parts of Health (which consist of the weekly numbers bound). If you fail to find the necessary information therein, write again. 2. For the face pimples, live temperately, and try the following, to be made up by a druggist:—Sulphide of calcium, 2 grains; sugar of milk, 40 grains. Make 20 pilules. One to be take every three or four hours for a week.

J. T. N.—1. For the head-pains, try 15 grains bromide of potass, dissolved in a wineglassful of water, for a few nights on going to bed. 2. We cannot reply to your second question without knowing more of your symptoms, habits, &c. We may say, however, that from your account, we feel inclined to agree with the medical opinion.

Thorax.—We think the pain is purely muscular, or possibly a little pleurisy. Wear a warm porous plaster for a week or two. The exertion at the baths is much more likely to have caused the pain than the crowd. Warmth and support by a plaster will relieve you. If not relieved, write again.

Sewell.—Nothing to be detected in the skin. Try the effect of a little pure Vaseline applied to the part each night, and well rubbed into the palm.

H.—Write to Mr. Browning, 63, Strand, London, for his method of sight-testing. Give your eyes rest, and try a pair of preservers for a time, as an aid to the sight. Give up all night-reading.

Scottie.—Merely a sign of a little weakness, which should cause

you no alarm. Follow advice to "J. Sharp," in present number of HEALTH. Beware of quacks. The "Hunter" firm is notorious.

WAVERLEY.—Your symptoms are those of indigestion. Look to your general health. Avoid eating late at night, and try a little Morson's Pepsine with your food, as directed on the bottle. If not improved, write again.

J. CORNWELL.—See advice to "Caput" (2) in present number.

NEMO (No. 2.).—We do not think onion-juice would be of the slightest use in snake-bite. The poison there acts instantaneously, and often defies all remedies, however powerful.

H. F. (HILLHEAD.)—What you mention is of common occurrence in health. You certainly do not suffer from the disease you name. Let no one persuade you that you are ill. Follow advice to "J. Sharp" above, but you may omit the tonic, as you are in good health.

A FEARFUL ONE.—We should advise you to consult a good physician, and lay your case plainly before him. The dryness depends, we should fancy, more on a mental or nervous than on a physical cause. Attend well to your general health, but a case like yours demands a medical consultation. You have our warmest sympathy.

H. F. P. L.—The prescription would do no harm; but the acid therein would not, we think, be wholly beneficial in your case. Try the following:—Carbonate of bismuth, 1½ drachms; carbonate of magnesia, 1½ drachms; mucilage of tragacanth, 1½ ounces; water to make up 8 ounces. Two tablespoonfuls every four hours, a quarter of an hour before meals. 2. Give the Macassar oil a fair trial. (Have you read our "Hair" papers?) 3. The Fuller's wool is very good, and would be preferable, we fancy, to the "Papier." (Please address all inquiries regarding the numbers of HEALTH to the publishers.)

A. HAMILTON.—In your case we regard rest as the sheet-anchor of your cure. Try the tincture of iodine again, and you might also try the effect of a good-fitting elastic bandage. By rest now, you may save after-pains.

A. HUGGAN.—The case you mention is one of general debility, in which indigestion plays a prominent part. We should recommend the use of Morson's "Pepsine" (as directed on the bottle) along with the food, and the food should be light and nourishing,—milk, eggs, puddings, &c.; no tea or coffee. If not improved under this treatment, write again.

JACOBUS.—1. Don't eat late at night, and follow advice given to "A. Huggan" above. 2. Give the little patient cod-liver oil with syrup of iodide of iron added (any druggist will add the iron for you). The child is suffering from general debility, and if you attend to advice just given and take her for a while to the seaside (Trinity or Portobello), keeping her warmly clad, you may find she will improve. If the cod oil and iron disagree with her, try the cod-liver oil emulsion. In lieu of the latter, give plenty of rich cream, milk, &c.

CARADOC.—See advice to "J. Sharp" above. By exercising your common-sense and living a healthy life you need have no fear for the future.

COMMERCE.—No; so long as you are careful to take moderate exercise and avoid stooping-habits you need have no fear. The pains are either muscular or arise from indigestion. Look to your general health and clothe warmly. Glad to be of further service, if need be.

J. F. J.—Don't tamper any more with injections. Take a teaspoonful of "Fellows' Syrup of Hypophosphites" thrice a day before meals in a wineglassful of water. That will act as an efficient tonic—which you require. As a mild aperient try "Freidrichshall" or "Æsculap" water, when necessary, in the mornings.

A. WARD.—Yours is a case which comes under the description in our "Hair" papers of those in which attention to the general health will be of more benefit to the hair than any lotions. Rub Macassar oil night and morning into the roots, and attend to your health. You may benefit from the use of the tonic recommended to "J. F. J." above. Glad to advise again, if necessary.

LIDA.—No drug should be taken constantly. Alternate the bismuth for a time with "Morson's Pepsine." You take the bismuth in a correct fashion, but you must look to your health, so as to avoid the necessity for continual drugging. Examine your dietary carefully, and try to discover which foods agree best with you. 2. The tumours are "wens," readily removable by surgical aid.

P. T.—Your weakness of sight clearly arises from over-study. You must be careful lest you injure your sight. The amount of study you indulge in now exhausts your physical powers. We can only say work less and rest more. No medicine can brace you up against the hard work you are at present engaged in.

IVY.—1. Try the remedy for the face eruption recommended to "Caput" in present number. 2. Apply pure Vaseline to the eyelids each night. Write again if not improved.

SOUTH PLACE.—Probably constitutional; but try the tonic recommended to "J. F. J." above as a nerve-stimulant, and see what effect it has on your health.

J. ELKINGTON.—If the opposite side is normally developed, there need be no fear. Such a new development on one side does not preclude functional activity; and what you mention regarding the habits shows that the function must be active and normal in character.

J. N. MERRIMAN.—You may not always be troubled, but even if you are, there can be no disease present. Cold sponging and moderate exercise should relieve you, so long as you remain in your present condition. The interval you name is perfectly consistent with health. The secretion you mention as occasionally appearing is not what you suppose it to be. You are quite well—endeavour, by attention to the general health, to keep so.

TRIAL.—You should purchase Dr. Schüssler's pamphlet of Messrs. Newberry, and read therein what he says. If you fail to get the information you require, we can obtain it for you from a private source. Why do you not obtain the cell-salts as directed in the letter to which you allude?

A. M. S.—Such an ulcer requires careful surgical treatment to obviate the risk of bleeding. See a surgeon, and have it properly dressed.

JOD.—The treatment is rest; and the part should be bathed with a lotion composed of extract of belladonna, one scruple, and water, four ounces. Wear a bandage so as to support the part.

J. H.—We have never heard of any feasible objection to the shirts, unless when too much clothing is worn, they become damp through the perspiration. Our favourite method of winter clothing is a somewhat light Jersey flannel next the skin and a heavier flannel shirt over that. In winter a cotton or linen shirt over the light Jersey is not a sufficient protection in our climate.

RUFUS.—Try the inhalations recommended to "W. Scott," in No. 24 of HEALTH. In your case, a teaspoonful of cod-liver oil thrice daily would be advisable.

TREBLA.—Your note replied to. One of the chains might do you good and is worth a trial.

ACTONIAN.—We do not think you need fear in the least that your affection will attack a vital part. With care, it will certainly not do so. We should imagine that hot salt baths would benefit your foot; and you might try such. Write again after a trial. Avoid all stimulants meanwhile and all acid foods.

A. M. P. HERBERT.—Why not seek some interesting leisure occupation? You don't require medicine. Interest yourself in some pursuit or study. One of the best cures for a case like yours is a walk or two through the slums of a city, and the observation of the masses who would esteem your life and your position an enviable one. Seek cheerful society; and if you feel low in health, try a change of air.

PICTOR IGNOTUS.—1. No; a perfectly healthy occurrence. 2. Tends, we think, to check the discharge.

C. E. BUTLER.—Any surgical instrument maker or druggist will supply you with the necessary injection apparatus. Can be performed by yourself.

NEMO.—Treatment by cod-liver oil and by iron—such as: cod-liver oil, six ounces; syrup of iodie of iron, 3 drachms; mucilage acaciæ, one ounce. A tablespoonful thrice daily. Clothe warmly; avoid all tendency to chills; and seeking medical advice whenever any symptoms appear.

OREGON.—Yours is a case for a careful examination by a consulting physician. The symptoms you name may arise from a variety of causes; and our advice is that you should apply at one of your hospitals and undergo a thorough examination. The "food" symptoms appear to us to be connected specially with the stomach; but only a medical examination can solve the problem.

E. G. C.—Try the effect of the treatment by the inhalations recommended to "W. Scott," in No. 24, HEALTH. The following will also do good:—Carbonate of ammonia, one drachm; tincture of spills, 3 drachms; compound tincture of camphor, half-an-ounce; infusion of senega to make up six ounces. A tablespoonful every four hours.

CARDIA.—Try the effect of giving up your tobacco. The use of tobacco increases the tendency you name. Electricity is not advisable in your case. See to your diet, in the way of exact regulation.

ONE WHO WANTS TO KNOW.—1. We doubt if any exercises would help you in the matter of the wrist. Try the effect of a nerve-tonic recommended to "J. F. J." in present number of HEALTH. Piano-practice might help you, or type-writing with a machine. At the Zander Institute, Soho-square, you may find machines which will aid you. Visit the Institute, and inspect the machines. 2. The ear-disease should be treated by an aural surgeon. The "drum" is often perforated after scarlet fever.

J. THOMPSON.—We think you should try cod-liver oil emulsion for a time, and indulge in some light exercise with dumb-bells or

clubs. Cold sponging the chest and friction with a flesh-brush would also do good. Take moderate walking exercise, retire to rest early, and do not rise over early.

C. Todd.—The "yawning" is simply indicative of weariness and exhaustion. There is no special significance attachable to the habit. After due rest, the tendency passes off. Try the tonic recommended to "Rural," in present number if you are in any way low in health.

B. L. Perthshire.—See advice to "J. F. J." in present number, and, in addition, pay great attention to cleanliness.

Nemo (St. Neot's).—Symptoms those of general indigestion. See notice to "Waverley" in present number. Your food must be light—milk-pudding, eggs, &c. Give up tea, coffee, and stimulants for a time. Rest from great exertion for a time also, and take only moderate exercise.

H. Seymour.—Try the tonic recommended to "J. F. J." in present number of Health. If not improved, send us a further description of your case.

Sidney.—Try the simple treatments by inhalations recommended to "W. Scott," in No. 24 of Health. Clothe warmly and avoid chills.

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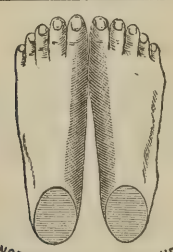

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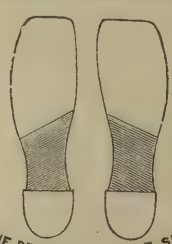

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, OCTOBER* 19, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The question of "over-strain" in education seems destined to acquire perennial importance in the eyes of health-reformers. The medical journals have been discussing the question at length, and educationists seem to be fully alive to the import of the topic. A recent contribution to the subject by Mr. W. Lant Carpenter, one of our contributors, has just been laid before us. In an article of much power, contributed by Mr. Carpenter to the *Modern Review* for July of the present year, he lays before the public the doctrine that in science-teaching in schools there is a remedy for over-strain. This has all along been our own opinion. If we can take boys and girls off the jog-trot of educational routine by interesting them in the great world in which they live—its matter and force, its birds, beasts, and flowers, its rocks and fossils—we impart to their studies a new zest, and open before them a universe that must possess an unending charm throughout life for those who know something of its ways and works.

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Not so long ago people were inclined to regard the demand that science should be represented in education, as tantamount to the exclusion of classics and of other branches. But both sides, scientists and teachers, have calmed down. There are few, if any, teachers now-a-days who do not profess some branch or other of science, and there are few who do not teach science in their schools. After all, science is the great civiliser of humanity, and it claims this place in education because its aims are so wide and its practical applications to human life endless. How science in education must in time affect national health becomes clear when we reflect that if children are taught the elements of physiology and the laws of health in schools, they will enter life prepared to recognise and avoid the sanitary pitfalls into which so many of their elders unconsciously fall.

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As a relief in education, the teaching of science comes prominently to the front. Science-teaching in its proper sense is the teaching children to use eyes and ears and fingers; to think for themselves, to find out plain facts and truths to which the teaching leads, and to form rational ideas about the world and themselves. Those who wish to know how this may be accomplished should read Mr. Carpenter's paper. Therein we find quoted some ludicrous examples of the baldness of ideas which children are too often left to possess about the universe. Of forty-eight children questioned at Boston (U.S.A.), twenty believed sun, moon, or stars to live; fifteen thought a doll, and sixteen thought flowers, would suffer pain if burned. Of a large number questioned, forty-eight per cent. imagined that the sun at night "goes, or rolls, or flies, is blown, or walks, or God pulls it up higher out of sight. He takes it to heaven, and perhaps puts it to bed, or even takes off its clothes and puts them on again in the morning; or, again, it lies under the trees where the angels mind it." The moon "comes round when people forget to light lamps;" and God "lights the stars with matches, and blows them out and opens the door and calls them in in the morning." These are samples of the ideas of school children, and it is not too much to say that what was found at Boston may be paralleled in any British town. Truly in the matter of real knowledge and health, it is high time parents began to demand the kindly teachings of science for their little ones, and for the growth and culture of their minds in the knowledge of the fair world around.

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There is, however, another point immediately connected with the health of the young, to which we must draw attention. There is a crying need in school-life for a regular system of well-ordered physical exercises—such as have been established under the auspices of the London School Board. Parents to-day seem to associate "gymnastics" and "exercise" with acrobatic feats. They do not recognise that a certain "physical training" is really part and parcel of the daily life of all—as when we walk or run. Still less do they seem to appreciate the fact that many a child grows up weakly or even deformed from want of common attention to the development of its chest and frame generally, and from lack of such exercise as might be given at schools with the utmost ease. Sweden is far ahead of us in this respect with its system of "physical education." When boys and girls all are made to look forward (as they do with delight wherever they have such instruction) to the exercise class as a part of their ordinary education, we shall hear less of educational overstrain, because we shall give them healthier bodies, and be able thus also to enlarge the sphere of the educationist himself.

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For the information of those of our London readers who feel interested in knowing where a carefully conducted class for teaching physical exercises to girls is held, we may add that Miss Marian Bristed holds a gymnastic practice every Wednesday afternoon at half-past three o'clock, in the Lecture Hall of the Presbyterian Church, Camden-road. The system there taught should be seen by all who desire the encouragement of sound frames in the younger members of the gentler sex.

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Professor Gairdner, of Glasgow, sends us a kind note wherein he points out that the case of the German girl mentioned in our "Notes by the Way," in No. 25, as having bitten off and swallowed the ends of her hairs, is by no means novel. The Professor points out the interesting fact that a similar case was recorded by Dr. Ritchie, of Glasgow, in the *Edinburgh Medical Journal*, for July,

1849, whilst other instances of this curious habit of hair-swallowing are also known. The Glasgow case was fatal, while the German case, in which the mass of hair was removed from the stomach by an operation, must be added to the list of surgical successes. To this latter phase of the case we are glad to direct attention.

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It will be news to most people, we dare say, that there exists a monthly periodical (now in its 5th number), called *The Spiritual Record*, and devoted to the advocacy of spiritualism. In the number of this journal for the current month, Health is favoured with a criticism. On the principle of feeling thankful for small mercies, we feel grateful to the editor of *The Spiritual Record* for his demonstration of the depths of imbecility to which the human mind may occasionally wander. In criticising our article on the Belgian "stigmatie," Louise Lateau, the editor of this sapient periodical elects to believe—as we read his paragraph—that the story of the girl's fasting for eleven years was credible. He also adds that our study of the case illustrates "the golden rule of denying every fact you cannot account for." We suspect the "spiritualists" have so often felt the force of this rule and its application by the common sense of mankind, as applied to their practices and beliefs, that they seek to bring it somewhat into derision. But the man who thinks Louise Lateau's case lies outside the pale of scientific explanation, and dwells in the clouds (and fogs) of spiritualism, had perhaps better be left in the cheerful company of such a belief. On the theory of the editor of *The Spiritual Record*, every hysterical girl, and possibly every lunatic also, must appeal to his special "ism" for the true explanation of their affection. Medical science does not like wags of *The Spiritual Record* and similar publications, but we believe the dislike is perfectly mutual.

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Here is a nice cheerful passage from the *Record*. A bereaved widower came to a spiritualistic *séance* and received what the *Record* terms "an unmistakable unquestionably genuine message from his wife." The inference reasonable people are asked to draw from this recital is, that spiritualism is of great service in bringing hope, joy, &c., to millions. But there is a charming simplicity in the *Record's* assumption that humanity at large will accept its mere statement of the message from the spirit-wife, as a proof that such an event actually occurred. It is clear, as we have already remarked, that spiritualists must have all faith—and no science.

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The latest novelty we have heard of is the manufacture of "artificial eggs." These productions are said to be turned out in America at the rate of 1,000 per hour. The "yolks" consist of a paste formed of starch and other materials. The "whites" are made of albumen—chemically, the same as white of egg. The inner skin is a gelatine film, and the shell is formed of plaster of Paris. The "eggs" are frozen in the manufacture, and can thus be readily and easily made. In point of taste, the artificial eggs are said to equal the genuine articles; but a contemporary adds the sage remark that "even the most assiduous hen had failed to produce chicks from these compounds."

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

TYPE-WRITERS AND WRITER'S CRAMP.

SECOND PAPER.

The rate of speed at which operators can work the type-writer varies, of course, with the machine, and with the amount of experience and practice the operator has had in working it. In our experience we have found type-writers to vary greatly in their performances, but with even ordinary practice from 25 to 40 words per minute are readily attained. In one case we saw 50 words per minute printed; but, on good authority, it is alleged that from 60 to 70, or even 75 words may be printed in that space of time. Such facility can only be attained, however, after long practice; but, once acquired, we believe the power of rapidly manipulating this ingenious instrument is easily maintained.

Mr. Brudenell Carter, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, in his treatise on "Eyesight, Good and Bad," has the following remarks on the relationship between the use of the type-writer and the preservation of the eyesight:—

"Even in learning the use of the instrument, when the letters have to be looked for one by one until the fingers become sufficiently familiar with their several positions to touch them instinctively, the characters are so large that there is no appreciable strain upon the vision; and, when once dexterity is attained, the eyes can scarcely be said to be used at all. My own eyes have never occasioned me any discomfort; and my own use of the type-writer rests upon quite different grounds; but yet my experience of it enables me to recommend it very strongly to all persons who, having to write much, are made conscious by the exercise that they have eyes. For the short-sighted it is especially valuable, because there can never be any inducement to stoop over it, so that a great snare to them in writing is altogether set aside. Next only in advantage to the facilities it affords for writing are those which it affords for reading what has been written; for this is printed in perfectly spaced lines, at regular, and, if desired at rather wide intervals, in block capitals of perfect clearness. The author who wishes to glance back over his MS. is almost as much helped as he who only wishes to produce it; and the labour of seeing, in every stage of the process, is either abolished or reduced to a minimum. So much is this the case that I am informed, although I cannot speak on this point from personal knowledge, that its use is readily acquired by the blind.

"The other advantages of the machine, those for which chiefly I personally value and employ it, are worthy of a moment's consideration. Its work in my hands is about twice as rapid as that of a pen; and became so after a few weeks of practice. A new machine is frequently a little stiff, as with machines of every kind; but, when once the type-writer has been worked into running order, the keys move as easily as those of a piano, and the effort of tapping them, being accomplished by the finger tips, and being divided between two or three fingers of each hand, is unfelt, however long it may be continued. I have worked the machine for eight consecutive hours without more than ten minutes' interruption, and at the end of that time my hands were not conscious of the least fatigue. Every writer is aware that the same thing cannot be said with regard to the pen; for that the effort of holding it, which is performed almost exclusively by the muscles of the ball

of the thumb, opposed by those of the fore and ring fingers, soon becomes very fatiguing, and, in professed copyists, not seldom produces an affliction known as 'scrivener's cramp,' which sometimes passes on to complete paralysis of the muscles which are concerned. Before I possessed a type-writer my own muscles were often so tired by writing that I had seriously thought of abandoning the practice, lest the strain thrown upon them might in time impair the qualities of the hand as an instrument for surgical purposes; but since I have had a type-writer, these feelings of fatigue are unknown, not only on account of the division of labour between several fingers, but also because the work is not done by the small muscles of the fingers at all, but by the large ones of the forearm, which are capable of much greater and more sustained exertion.

"Of less importance, but still not to be left out of account, are the beauty and clearness of the MS. which the instrument produces. All authors are aware that it is impossible to put the finishing touches to written composition until it appears in the form of a proof, because the comparative illegibility of even the best handwriting prevents that looking forward which is essential to complete correction. Hence it follows that the cost of corrections forms an important item in the cost of publication. With a type-writer this difficulty no longer exists. The result which it produces is clearer and more legible than any ordinary proof, and every correction can be made by interlineation either with the machine itself or with a pen, before the MS. is sent to the printer.

"The fair copy of the present treatise, for example, was produced by my own hands in an aggregate of about fifty hours, and almost the only faults which required correction in the proof were the few accidents from wrong types which had been overlooked by the reader. The original setting-up was in the pages as they now appear, instead of in slips as usual; and the total cost of a type-writer would be more than repaid to many authors by the saving which it would effect in the production of even a single volume.

"Like other machines, the type-writer did not spring full-grown from the brain of its inventor, but has only gradually been brought to its present degree of excellence. Since I first obtained one, several improvements of detail have been introduced, and one of the latest forms is constructed to print either capitals or small letters at the will of the operator, instead of capitals only. Another form is fitted with a plate-glass cover, which encloses the whole of the working parts, and intercepts all sound. Without this cover some tapping noise, comparable to that of some of the forms of sewing-machine, is an inseparable accompaniment of the instrument. The glass case is said to have another advantage, in that it prevents the inking-ribbon, with which the machine is supplied, from being readily influenced by changes in the hygrometric condition of the atmosphere. Without this protection the ribbon is soon affected either by dryness or moisture; and hence, for continuous work in changeable weather, it is well to keep two ribbons, one somewhat more saturated than the other.

"Upon all the above grounds, and after four years of daily personal use, I most strongly recommend the type-writer to all persons who write for considerable periods of time, more especially to the short-sighted, or to those who have any kind of trouble about their eyes. Even apart from such trouble, I think no systematic writer should be without it unless he be one of those curiously constituted creatures to whom the caprice of nature has denied the gift of mechanical aptitude, even in its most rudimentary form. Those who possess two left hands, and whose fingers are all thumbs, had better, perhaps, leave the type-writer alone; but for all others it is an inexpressible relief either for weary hands or for weary eyes, and its prime cost will be speedily repaid by the resulting economy both of money and of time. The only kind of writing to which it is inapplicable is for making entries in books, and even this difficulty has to a great extent been overcome in America by the practice of using separate sheets, which are preserved in a portfolio and then bound in a volume. The records of the Ophthalmic department of St. George's Hospital were for some time taken by a type-writer and preserved in this manner.

"In using the type-writer it is quite possible to keep the shoulders square and to sit erect; but nearly all persons who write with a pen at a low table or desk contract a habit of stooping, which is in many ways prejudicial to them. It not only contracts the chest so as to interfere with the freedom of respiration, and thus with the due aëration of the blood, but it also tends to produce congestion of the head generally and of the eyes in particular."

(To be continued.)

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc.

NINTH (AND LAST) PAPER.

In the last article of this series we gave our readers some account of Professor McKendrick's able lecture and demonstration upon "Galvani and Animal Electricity," delivered before the British Association at Southport. During the meeting, also, a very interesting paper was read in the Biological section, by Dr. W. H. Stone (of St. Thomas's Hospital) upon the "Electrical Resistance of the Human Body." The author described at some length the means which he adopted to reduce the skin-resistance to a minimum (chiefly by prolonged soaking in water, as pointed out in the preceding article), and also his method of obtaining good contacts with the source of electricity and with the measuring instruments. These he got by wrapping the limbs firstly with a surgical bandage dipped in salt and water, and then covering this with a strip of thin sheet-lead, wound over the limbs just like a bandage. He believed that this entirely eliminated the skin-resistance, because, in the case of a patient who died, he found that the body-resistance measured in this way was the same as when the electrodes employed were of wire, and pushed up 3 inches into the flesh, so as to ensure perfect contact underneath the skin. The mode of making the observation was minutely described, and the standard circuit usually taken in the body was stated to be from the wrist to the ankle, a distance which could be readily measured. It appeared that on this circuit the normal resistance of the body was, in electrical language, about 1,030 Ohms., and that it did not vary much with the size of the individual—the Hungarian giant, for example, giving nearly the same result as a very small man. In disease, however, the resistance was greatly modified. A case of half-paralysis (*hemiplegia*) was mentioned in which it was 730 Ohms less. In the case of a man dying from renal disease, the body-resistance diminished as the temperature fell, being at one time only half the normal, and temporarily increased again when the patient rallied

slightly. After death, however, the resistance again rose to the normal. In the discussion which followed, several gentlemen took part, including Dr. Carpenter, Prof. Ray Lankester (President of the Section), and the present writer. Dr. Stone, in reply, expressed a decided opinion that the resistance of tissue increased with its vitality, remarking that it was well known that after somatic death (*i.e.*, the death of the body as a whole), the absolute vitality of certain tissues was largely increased. In this connection, it may be useful to recall the point upon which Prof. McKendrick insisted, viz., that the electrical condition of tissue was to be regarded as the physical expression of the chemical changes that occurred in it; these chemical changes being the result of the activity of the muscle itself. It appears, therefore, that all these various changes are closely connected, and that these phenomena are another, and a remarkable, instance of what used to be called the Correlation of Force, but is now rather more often spoken of under the name of Conservation of Energy.

The ends which the writer had in view at the commencement of this series of articles have now been attained. He was anxious, on the one hand, to warn the public against the large amount of utterly inefficient trash which was largely sold as *bonâ-fide* medico-electric appliances, the sale of which was promoted in every possible way by an enormous expenditure in advertising in public prints, as well as by other and more objectionable modes; on the other hand, he was anxious not to convey the impression that there were no genuine and efficient appliances to be obtained. An instance of the latter class has just been brought under his notice, in the form of a new electric hair and flesh brush, much more powerful than that described in the fourth paper of this series. These brushes have been patented by Mr. J. Norman Aronson, and are being manufactured by the celebrated firm of Elliott Bros., Strand, London, whose name is a guarantee for electrical work of the highest class. The back of the brush contains a small induction-coil, which is excited by a small sealed Leclanché battery, surrounded by metal, and held in the hand as one of the electrodes; it is connected by a flexible cord, containing many very fine copper wires with the brush, and on applying the brush to any part of the body, the rapidly alternating current produced by the induction coil passes between that point and the hand. The brushes are provided with a regulator for increasing or diminishing the strength of the current, and with an ingenious "push" for starting or stopping it altogether. In a very few weeks, these brushes will be offered for sale; it must be remembered that the current given by them is induced, intermittent, and alternate, not a continuous flow, such as is produced by any battery in which the electrical energy is derived directly from chemical action. What the charac teristic differences between the two kinds of current are has been already pointed out in previous articles of this series. An ingenious application of the continuous current to dental purposes has just been made by Dr. Wedgwood, who has contrived an arrangement, to be used either with or without artificial teeth, in which what is practically a minute battery composed of pairs of two metals in very small plates is worn inside the mouth. The saliva acts as an exciting fluid, and a weak continuous current, localised in the palate and gums, is thus set up.

There are many ways in which electrical appliances, other than medical ones, may afford valuable "aids to health"—such, for example, as the use of the electric light in hot and crowded rooms, or, indeed, in any apartments where ventilation is from any cause inefficient; in this case, as neither heat nor noxious products of combustion are produced, the sanitary advantages are obvious. Another example is the use of electrical energy as a motive power, for the performance of various kinds of domestic operations at present demanding the expenditure of vital energy. The treatment of these subjects, however, is beyond the scope of the present series of articles, and whether it shall be attempted at all in these columns is at present an open question.

It is perhaps scarcely too much to say that the present condition of what is often called "Medical Electricity" is an eminently unsatisfactory one. On the one hand, the medical men who occasionally resort to it as a therapeutic agent are too often quite ignorant of the simplest laws of electrical science, which, as we have pointed out, are neither more complex nor less well known than those of other branches of physics; and on the other hand, the professed electrician, who is really competent to deal with that side of the question, is usually unacquainted with the complex processes occurring in the human organism, even in their normal condition, and *à fortiori* is still less able to deal with the abnormal phenomena of disease. There is still a wide field open for research in this branch of the medical profession, and the true direction in which this should advance is seen in the attempts which are now for the first time (*i.e.* within the last year or two) being made to apply to the human body, under carefully observed conditions, those instruments of precision which the recent rapid development of the practical application of electricity has placed in our hands. No opportunity has been lost in the present series of articles of pointing out the great influence of "faith" (*i.e.*, of attention fixed on an object with the confident expectation of cure) upon the use of the many appliances before the public, faith which, there is no doubt, has had by far the largest share in most cases of alleged cure; hence another object which the writer has had in view has been to point out clearly the scientific principles upon which such medico-electric appliances should be constructed, and to explain at length some simple but reliable tests for their electrical efficiency. How far he has succeeded in this, he leaves it to his readers to judge. In the course of the publication of the articles, he has received, privately as well as publicly, much spontaneous testimony to the great value of their general drift both from electricians and from medical men; and in now taking leave of his readers, he only desires to add that he will be always glad in the future to attend to any letters upon the subject-matter of this series of articles which may be sent to him, care of the Editor of Health.

Sweating.—Dr. H. Currie writes in the *Australian Medical Journal*:—For excessive sweating, bathe the body, a small surface at a time, with a wet sponge with the following lotion:—

Alcohol	one ounce
Quiniæ Sulph.	one drachm.

A lotion to be made.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

DEODORANTS AND DISINFECTANTS.

Our correspondent writes from Florence, under date 3rd October :—

Referring again to this most important subject, in the discussion of which you have allowed me to enter (*Vide* Health, Vol. 1. p. 391), I am about to ask for a little more space.

Your compositors have made an error in printing "the late Dr. Carr," instead of "the late Dr. Farr," whose life (it may be almost superfluous to record) was a most useful one in the cause of sanitation, by his statistical labours at the Registrar-General's Office. One of these was on the subject about which I quoted in your journal.

I fear that I have not made myself understood in the matters on which I treated, from the note which you place under my communication, and wherein you say "Clay cannot 'disinfect'; and whilst we agree with our correspondent in many of his remarks, the value of 'disinfection' is, we think, too much neglected in his argument." The "Hospital Physician" (at page 56, of Health) defines disinfection to be "the chief means we possess for *preventing the spreading* of infectious diseases." But it appears to me better to *prevent the generation* of disease in the first instance, which was the chief object I had in view. For if disease be not *generated*, there can exist no power of *spreading*.

Poor-Law Commissioners (even in a country where poetry is so "racy of the soil" as in Ireland) are not generally considered as much more tending to the cultivation of the "tuneful nine" than a Blue-book; yet I remember that about twelve years ago, when there was an alarm in the sister island in dread of the re-visit of cholera, the guardians of the different Poor-Law Boards throughout the country were furnished—it was said from their head-quarters in Dublin—with a lengthy series of verses, scarcely meriting the title of poetry in an epic or idyllic sense, and though deficient in grammar and rhythm, eminently practical. They were under the heading of "Precautionary Hints on the Threatened Approach of Cholera." There were twenty-five verses, divided into two parts, No. 1 being about "The Skin," and No. 2 "The Blood." I am about to quote two of the last verses, and one of these (it may be almost inferred) seems prophetic of the appearance of your journal.

> Then show that you value your blood and your skin;
> Remove every nuisance without or within;
> Obey all the laws that are made, to that end,
> And regard the Inspector of Health as your friend.
>
> If your house have a taint, employ in good time
> Either carbolic acid or chlorate of lime;
> But of *all disinfectants the earth is the best;*
> *Smells covered by earth are for ever at rest.*

In a chemical point of view, perhaps, the opinions of the Poor Law Commissioners may *not* be considered orthodox in the definition of a disinfectant; but I am about to relate what I can adduce in corroboration of the opinion as to the effectual "squelching out"—to use an expressive Yankeeism—of bad smells and their infectious influence by means of dried earth.

Fifteen years ago I resided for some considerable time, say close on three years, in one of the large cities of Peru. There, amongst a population of nearly thirty thousand people, there were not half a dozen *cabinets d'aisance* in the town. Water had to be brought from a distance, and was very expensive. Then I first commenced the earth system, which there was no difficulty in carrying out, for, as it never rains on that part of the Pacific coast, any amount of dry earth can be had everywhere. In the city, the excretory matters were taken away from the houses of those who could afford to pay for it by barrels in carts, each barrel having a large funnel for the bung-hole. This service was done by the servants of a company called "Abromicos," who derived some privileges from the municipality for the work. As it was generally carried out at about mid-day, and often when the tropical sun was in full blaze, it may be inferred that little of the rose or violet could be imagined in walking through these streets. Those who could not afford to pay for this transport, being the larger part of the population, had to throw waste matters into the streets or the *Azequias*, where the principal parts were soon disposed of by Turkey-buzzards—appropriately styled by Swainson as "the scavengers of Nature." Along the centres of the chief streets were these *Azequias*—channels of about 1 ft. in depth and 2 ft. wide, into which the filth and garbage of all kinds were thrown, to dribble away as they might, or to rot and fester into putrescence, and consequent pestilence.

One very narrow street, leading from a main thoroughfare, had always a heavy disagreeable odour from it when I was passing that way—and this was sensible to every person coming from a purer air. On examining, I found that at the other end of it, which terminated in the camp, was a cesspool, permanently open and uncovered—into which the inhabitants of the street made the custom of daily emptying the receptacles of their excreta during the previous night. Whether it had ever been cleaned out since the days of Pizarro, I could not ascertain. But on further inquiry at the municipal offices I was informed that this street was *the most expensive* (to the Corporation) of the city's tenements, that the doctor was always there, that its cost for coffins was very remarkable, and that, in fact, it was the irrepressible abiding-place of measles, typhoid, diarrhœa, cholera, and various other morbid conditions. By the registrar's book, which was courteously submitted to me, I found that the mortality of children under one year in this street (which was one of the longest and narrowest in the town) was invariably from 45 to 50 per cent., and all the infant population under five years went off at the rate of 60 to 65 per cent. per annum. In this you will see that it exceeded the death-rate at Northampton from foul air, mentioned in Mr. Chadwick's lecture in that city "On the Sanitation of a County," delivered on Aug. 15, 1876. Of what use, may I ask, would disinfectants of the pharmaceutical kind have been here, so long as the cesspool existed? This was the question that at once came to my mind. But I had enough of experience in the matter of earth to induce me to recommend it to the Corporation—at the same time pointing out what an economy, apart from higher motives, it would be to stop this state of things. I was met by the usual stereotyped answer of municipal bodies —want of funds." And so, with the aid of a friend, I managed to get half-a-dozen cartloads of dry clay brought down and thrown into the cesspool, that it might absorb, coalesce, and amalgamate with the contents. Enough clay

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street, London, W.—[Advt.]

was put in to have about a foot of stratum over the top. Then I tried to persuade the officials of the place to have a new cesspool made, and keep it wholesome by putting in some dry clay from time to time. But this they declined to promise, though giving a sort of doubtful hope that they would do so, for they could not avoid seeing that the effect was almost magical. In a few hours all bad smell had departed, whilst within the following and many succeeding weeks the death-rate sensibly diminished. But the people, as well as the authorities, are so suspicious of anything introduced by a foreigner, that they soon fell back into their dirty ways. The Great Revolution of 1872, soon followed by the war with Chili, extinguished all ideas of sanitation, and no other results ensued.

It is for such cities as that I mention in Peru, where there is little water and much dry earth, that the closets I have spoken of are appropriate. They are equally applicable to this city of Florence, on account of its scarcity of water in the summer-time and the profusion of argillaceous clay about its roads. Yet, "the city of flowers and flower of cities," though spoken of by me as being appropriate for such an experiment, is so clean a town as not at all to deserve the vilifications made against it only a month ago by a London newspaper.

I appreciate the value of disinfectants as much as any one can do; but it seems to me rather a dangerous thing to operate with those recommended by "An Hospital Physician," unless it is done by a medical practitioner or by a chemist.* Indeed, he himself speaks of the dangers that may result from carelessness (page 107 HEALTH), and therefore I am not enthusiastic about having a disinfecting pharmacy, with poisons in it, as a part of family furniture. Moreover, the poor, by whom disinfectants are most likely to be needed, cannot afford to buy such things—and even if they did, not one in a thousand knows how to manipulate them. Even the so-called best of these (though upon that point I have not full faith)—namely, carbolic acid—may prove very hurtful if not properly diluted. In Italy it is called fenic acid—derived, I see by the Italian Pharmacopœia, from the Greek *phaino*, signifying bright or glittering.

Everyone can use without danger what my forty years' experience has taught me to be the best of disinfectants, namely, Bailey's Sulphur Pastilles, lime in its different combinations of bisulphate, chlorate, and carbonate, and earth. The carbonate, or common lime, of which the poor man can buy a few pennyworth, is one of the best. I am glad to see that the "Hospital Physician" speaks so favourably (HEALTH, p. 89) of sulphur, which I have always found to be amongst the most powerful and successful of disinfectants. But the plan he describes of burning the solid sulphur in an iron dish or tray, and setting it alight by means of alcohol, is the same as was done in England, Ireland, and Scotland—substituting a red-hot coal for alcohol—when the cholera made its first appearance in 1831 or 1832. The sulphur pastilles are so much more convenient, so easily lighted with a match, and contain so much more sulphurous acid gas to be eliminated, that they are far preferable. They destroy all the infusoria or molecules of the air wherein they are burned. I have also known, more than twenty years ago, some cases of continued typhoid, in Liverpool, to have been cured by their being burned three or four times a day contiguous to the sick chamber, without the administration of a single dose of medicine.

* Our correspondent neglects to remember that the disinfecting directions he speaks of were specially written as instructions for the treatment of fever cases in our homes.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HYGIENE IN RELATION TO EDUCATION AND YOUTH.

By EDWARD H. RICHES, LL.D., F.R.A.S.

FIRST PAPER.

THE true principles of hygiene, if properly applied, may, in the words of the late Dr. Parkes (so well remembered for his labours in the cause of sanitation), be said to render "growth more perfect, decay less rapid, life more vigorous, and death more remote." Certainly a sequence of advantageous events worth striving after! We are witnessing in our day vast strides in scientific discovery, but if these strides are not to lead us into "fresh fields and pastures green," where life would become less burdensome to millions of disease-stricken mortals, then we may justly assume that either the error rests with our inability to apply those scientific principles which may be taken as a safe enough guide, or else an unpardonable lethargy is ours, which might, with but little trouble, be shaken off. The Duke of Albany a short time since remarked, in reference to those scientific principles which seem of late years to have become patent to all who have given thought and research to scientific study, that hygiene was "the application of scientific principles to the varying conditions under which we are called upon to live." And in this he said well; but, in applying our knowledge of hygiene generally, surely it will be well that we bear in mind the truth of the not often-quoted Chinese proverb, that "to make sure of well-developed older growths see well to the saplings." There is a truth underlying this proverb which is certainly applicable to our present purpose—namely, of dealing concisely and definitely with hygiene in relation to the young, their education, and the schools where our young of both sexes are located. Our remarks, although intended to apply with special force to the great number of private schools throughout the country, may, and it will be found do, apply equally in some cases where public schools are concerned. In this age of education, when, for the most part, parents are quite satisfied if the periodical report of their children at school be satisfactory as regards their mental progress, it may be well to emphasise the fact, that *a something else* than mere mental culture should be seen after; and that, where separation of mental education from an education of the body is effected, a piece of ignorant cruelty to the child too often ensues. Not that the boy or girl at school is expected either to care for or know anything about hygiene (except in a certain elementary form which should in all cases be judiciously taught), but the parent in deciding on a school should look to something more than the pleasing picture of the house and grounds at the head of the well-worded prospectus, which, by the way, in most cases draws attention to the fact that "the air of the vicinity is highly salubrious," and so forth. But this is not all that should be required. In all cases a personal inspection of the school where the child is to be left should be made; and it would be but little trouble to ascertain whether most of the necessary conditions of sanitation and hygienic principles we would here enforce are present or absent. For is not education the means by which boys and girls are to be developed into

the men and women who, in their turn, will take their part in adding to the world's population? And if this be so (and physical as well as mental conditions undoubtedly enter into this evolving of the "sapling" into the "older growth"), surely to neglect the one for the sake of the other is a grievous error. Let us, then, consider hygiene as that which applies to the education of the body; but, remembering how the mind reacts on the body of old and young alike, we must make the mental and physical education entirely inseparable.

Bodily exercise for boys and girls, after a close application to the desk, is an all-important matter, but extremes must be avoided in all cases. It is not every boy who can do the amount of strong exercise, either at running, jumping, football, cricket, &c., that others are capable of doing. There are cases where a boy may try to exercise himself as strongly as his companions, but, perhaps owing to some physical deficiency or disease, it is highly important that he should be checked. It is not every girl who is capable of the same amount of calisthenic exercises as others. A constant watch should be kept upon the young out of school; in fact, while education is going forward, if that education is to be such in its *comprehensive* sense, it is only when pupils are asleep in their beds that the eye of a teacher should be withheld. We do not say that the young are always to feel that they are being watched; not so, for that would be a profound error, and a child would thereby never have the chance of being its natural self. Nor, in this taking care of the young, must they be "coddled" and spoilt, and be told upon every occasion that "this must not be eaten," and "that must not be done," and so on. A child's nervous temperament may thereby be greatly weakened, and, instead of a mental vigour running parallel with a robustness of body, the very reverse may ensue.

In a certain sense, education is an art and not a science; and thus it is that it should be applied judiciously, and not by means of any hard-and-fast rules of action. It was said somewhere, that all is perfect and good as it comes from the hand of God, its Maker, but it degenerates in the hand of man. We would here quote what Mons. Raoul said in reference to the hygienic conditions of schools in general:—"Health is the last preoccupation of the schoolmaster at present. Narrow rooms—low, damp, deprived of sun, saturated with bad odours, sometimes hot and close, or subject to draughts; flat desks, seats too high or too low, clothing tight round the neck, the waist, or the legs; positions dangerous for the lungs, the stomach, and the circulation, the spinal column, and the brain; restraint in one position too long, brilliant colours, dazzling reflections of light either in quantity or direction—these are the conditions in which *the great majority* of children are brought up in schools and colleges, and even under the roofs of private families." We have seen it stated that the result of all this is, that the mortality of children up to ten years of age is 39 per cent. in Savoy, 42 per cent. in England, 43 per cent. in Holland, 48 per cent. in Prussia, and 50 per cent. in Bavaria. Thus it will be seen that on an average 44 per cent., or nearly *one-half*, of the children under ten years of age die. We can hardly say though that this high rate of mortality is entirely owing to defective hygienic matters in schools; but we do say that a great reduction in this rate would result, and the majority of diseases and physical shortcomings of boys and girls would be avoided, if in schools, the requirements essential to the health of youth were better understood and more widely practised.

However difficult it may be generally, and, of course, also in schools, to prevent some violation of hygienic principles, it is, nevertheless, certain that much might, and certainly should, be done to rectify errors existing, and to substitute, in the place of what is contrary to all that can induce to health, that which may to a great extent modify matters, and render even the school and all its appointments worthy of an establishment for the practising of both a physical as well as a mental education.

Surely hygiene should not be sacrificed to ambition with respect to high mental culture. Surely, everything should not be done at school for the improvement of youth except that which may aid in making the young life robust and vigorous! Three elements of health—air, water, light—must be properly dispensed to boy and girl; there is enough of them for all, both young and old. In our next paper upon the subject we propose treating of these definitely and in a practical way, whilst offering remarks, so far as they affect the purpose of these papers, upon instruction, school-room ventilation, food, sleep, &c.

A BAT, afflicted with blindness, for some time despaired of earning a livelihood, when the happy thought occurred to him to go into business as an oculist. Having advertised freely, and references being kindly permitted to the beetle, the owl, and the mole, it was not long ere he was enabled to retire with an ample fortune.

THE Dean of Bangor has been inveighing against tea-drinking, and in so doing has been re-echoing the teachings of physiology and dietetics. Excessive tea-drinking is very common; and amongst the working classes especially, the practice has come to be attended with very serious results in the way of mal-nutrition. Every one should know that tea contains little or no nourishment, while cocoa is a real food. The only persons who can afford to drink a moderate quantity of tea are those whose frames are fed with plenty of nutritious food. The poor spending money on tea, and keeping "the eternal teapot simmering on the hob," are purchasing, not health and strength, but weakness, and laying the foundations of a poverty of body they cannot afford to exhibit. There is no comparison between cocoa and tea as a beverage; and if those who at present take tea and bread as a meal, would replace the tea by cocoa and milk and bread, they would gain thereby a satisfying food, and avoid the evils of indigestion which arise from tea-bibbing as commonly practised.

MEDICAL AND SANITARY EXHIBITION, 1881.—AWARD OF MERIT.—DIABETES. VAN ABBOTT'S GLUTEN BREAD, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. VAN ABBOTT, 5, Princes-street, Cavendish-square, W.—DELICATE CHILDREN AND ADULTS SUFFERING FROM NERVOUS DEPRESSION. VAN ABBOTT'S HYPOPHOSPHITE OF LIME BISCUITS, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—VAN ABBOTT, 5, Princes-street, Cavendish-square.—[ADVT.]

"HOW TO OBTAIN LIGHT FROM COAL GAS," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[ADVT.]

ST. JOHN AMBULANCE ASSOCIATION.

The Central Executive Committee has just issued its report for the current year submitted at the general assembly of the order of St. John of Jerusalem on St. John's Day. It is stated that last autumn her Majesty the Queen was graciously pleased to become a life member of the association by a donation of £25 to the Shetland Islands Centre, of which Princess Beatrice became president, the Duke of Connaught accepting the like office for the Royal Military College. The number of centres and branches now established at home and abroad amounts to 190, while, in addition, many hundreds of "detached classes" for both sexes have been held in the United Kingdom, the Continent, and colonies, among the more recent foreign centres being Gibraltar, Bombay, and the Victoria Centre, Australia. During the year 9,069 certificates have been awarded, of which 1,139 were to women for the "nursing" course, 3,322 to women for the "first aid" course, and 4,608 to men, making a grand total of at least 70,000 certificates issued since the institution of the association in 1877. At one centre alone (Middlesbrough-on-Tees) 18 classes, numbering 600 pupils, were examined by an examiner during one visit. A noticeable feature in connection with this work, and one that unmistakably indicates its great utility, is the support and co-operation accorded to it by the medical profession, many leading members of which are actively engaged in its extension both at home and abroad. Numerous important meetings have been held in all parts of the country, several of which deserve special mention, such as the presentation of certificates by the Duke of Connaught at the Guildhall, the Lord Mayor presiding; by Princess Christian at Windsor, the Duke and Duchess of Teck at Richmond, by Prince Edward of Saxe-Weimar at Portsmouth, by Countess Spencer at Dublin, and by the Duke of Westminster at Chester. As in previous years, it has been found that those engaged in dangerous occupations, such as colliers, miners, railway employés, factory hands, firemen, &c., show great eagerness in attending the classes, the benefits of which have lately been extended to the police at the naval dockyards, the mercantile marine, and the Metropolitan Fire Brigade. Amongst various items of the year's work, such as the institution of the Egyptian Relief Fund, which culminated in the establishment of the Victoria Hospital at Cairo by Viscountess Strangford, and the formation of a transport department, the report states that by permission of the Commissioner of Works, ambulance stations have been formed at Hyde-park, and litters and *matériel* deposited at the lodges at the Marble Arch and Hyde-park-corner in charge of the police, most of whom have attended the classes. Attention is drawn to an admirable plan, illustrated by diagram, suggested by Lady Brassey, and already carried into effect at Battle and elsewhere, for the grouping of neighbouring villages and outlying districts, as the subsidiary sections of larger centres, and after an interesting statement as to the issue of stores, the value of which for the year has amounted to over £3,000, and an extract from a report to the Home Office by the Inspector of Mines for Lancashire, urging the value of the association's work, an urgent appeal is made in conclusion for increased personal co-operation and pecuniary support to a movement now essentially national in its operation and usefulness.

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE UNSANITARY HOMES OF THE RICH.

By C. F. Wingate.

(From the *North American Review.*)

PART II.

If we critically examine one of the palatial residences on Murray Hill, what do we find? Instead of being spacious, as if the owner liked ample room both for his comfort and to dispense a liberal hospitality, it is long and narrow, as is inevitable from the contracted site. The windows have little, if any, outlook, as the view is shut in by adjacent houses. Each owner seems determined to cover every inch of his land with brick and mortar, leaving only a paved patch some fifteen feet square for a yard, to dry clothes. The bit of grass-plot and grape-arbour, with an occasional fruit or shade tree, formerly in vogue, have gone out of fashion. Rich New Yorkers no longer care for such commonplace things. Their children do not require a play-ground. The family are content with an outlook of bare walls and neighbours' windows. Such yards as may be seen are so shut in as to appear like prison grounds. As the sunlight rarely enters such homes, the long three-deep suites of rooms never seem bright, sweet, or fresh, and there can be no free circulation of air. Such air as does enter the seldom-opened windows is redolent with scents from stables, soot from elevated railroads, vapours from factories, or odours from Hunter's Point refineries; the careful housekeeper therefore closes the windows tightly, and the sole source of air is the furnace register, which is supplied from a leaky cold-air box, filled with cellar-damp and street-dust. When ignited the latter smells like burnt feathers, and on analysis it yields twenty per cent. of organic matter. Yet air of this composition is the chief lung food of nine-tenths of the people of the metropolis. After passing through the furnace registers, it mingles with the vapours from the kitchen and laundry, or with gases from leaky drains or foul plumbing fixtures and the products of combustion from scores of gas-jets, forming what Professor Huxley aptly calls "a stirabout of solid particles," and a poor substitute for nature's atmosphere.

Ventilation is decidedly one of the lost arts, and in most houses there is hardly a pretence of providing it. The sole dependence for fresh air is usually windows and open fireplaces, the latter of which are becoming common. Where flues are provided to carry off foul air, they are so small and so roughly lined as to be of little utility. Ventilating shafts are little better, as they are seldom provided with proper openings at the roof, while the skylights over halls are in hundreds of cases tightly sealed. In a vast majority of houses, the air from the lower floors stagnates in the rooms next the roof, whose occupants are in a constant state of stupor from the impure atmosphere. The increasing prevalence of catarrh and pneumonia is pronounced by many physicians as due to the unwholesome air which our people breathe.

Two thousand years ago, Hippocrates said a dry soil is essential to health. A damp cellar is one of the least desirable features of a dwelling. Yet, Professor Chandler declares that not one house in a hundred, in New York, has a properly-constructed cellar, which explains the large proportion of deaths from consumption, and the prevalence of rheumatism in the metropolis. In the main part of the

occupied portion of Manhattan Island there is no soil drainage. Sewer connections are usually made with tile drains, which are rarely tight, and hence they seriously pollute the soil. There is a lack of ventilation and sunlight in cellars, which are crowded with wood and coal-bins, wine closets, and domestic rubbish. Householders should follow Professor Chandler's advice and inspect their cellars once a month.

In the best houses, the provisions kept in refrigerators are exposed to the chance of contamination when the drip-pipe connects directly with the house-drains. Frequent cases of sickness have been traced to this cause. Water-tanks and cisterns connected with soil-pipes are exposed to like contamination. The space behind the woodwork of basins, sinks, and other fixtures is almost invariably foul. Slop sinks are sources of offensive odours, and all these evils are intensified by the lack of water for flushing purposes, owing to the deficient pressure.

The multiplication of servants, and the lack of responsibility for domestic details, have an important sanitary bearing. In houses which have the largest number of domestics, there is often the least attention given to cleanliness. In one of the worst dwellings I have had occasion to examine, and where a death occurred under peculiarly tragic circumstances, there were nine servants, and if the number had been larger, I fear the whole family would have been carried off. In proof of the correctness of these assertions, I may cite the steady advance in the death-rate of New York City; the statements by official inspectors of the Board of Health of the amount of bad plumbing found everywhere; the evidence of other professional observers, like Colonel Waring, that defects in house drainage are prevalent in the very best houses, "almost without exception"; and the testimony of physicians like Dr. Fordyce Barker, Dr. Willard Parker, Dr. Frank H. Hamilton, and others, based upon wide experience and extensive practice. If other evidence were needed, it might be found in the number of practising physicians in New York City, the drug stores on every corner of the leading thoroughfares, and the large outlay for medical attendance and drugs in most families.

But this state of things is not confined to the metropolis. From Brooklyn, Boston, Philadelphia, Washington, St. Louis, Chicago, Cincinnati, San Francisco, and other cities, large and small, the same story is heard. The trail of the serpent is over them all. Wherever "Jerry" builders, ignorant plumbers, and unscrupulous owners or speculators are found, the same deplorable condition of things exists. In Brooklyn the finest homes on the Heights have been polluted with sewer gas, despite their superb situation overlooking New York Bay and swept by winds from every quarter. At the time of the Rockwell case, in 1879, a dozen houses on Montague-terrace were visited by diseases due to bad plumbing. Few of the houses have any barriers against sewer air. During the extensive epidemic of diphtheria in 1881 defective plumbing was found in the majority of the houses where cases occurred. In Washington the sanitary defects in the White House, which are believed to have contributed to President Garfield's death, are equalled by those in several public buildings, where trapless water-closets, leaky drains, furnaces with polluted air-supply abound. Mr. C. A. Robinson, Inspector of Plumbing of the District of Columbia, records a number of similar evils, many of them in "good houses, some among the finest of the city."

Mr. M. J. Jones would be glad to hear from a few gentlemen willing to join in forming a class for learning the Loisettian System of Memory.—Address, 82, New Park-road, Shrewsbury.—[Advt.]

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

BEAUTY AND HEALTH.

Æsthetical Sanitation. By William White, F.S.A., &c. (London: E. Stanford. 1883.)

Mr. White has collected to form this small volume the papers he contributed to the *British Architect.* He writes forcibly and sensibly regarding many important sanitary topics, and shows how perfect health and beauty may go hand-in-hand in the pathways of life. As an illustration of Mr. White's style and opinions, we quote his words when dealing with ill-fitting shoes:—

The injuries arising from ill-shaped, or tight, or high-heeled boots and shoes, are very serious to the figure and gait, but still more so to the general health, through the manner in which the distortion of the foot, and of its position, acts upon the muscles of the hips and spine.

Most of the cases in the Orthopædic hospitals come under spinal treatment. Even where there is no disease, evil often commences with the first tottering steps of childhood. The child may resent the *tightness* of a shoe and get redress; but suffering soon begins, perhaps unconsciously, through the way in which, by the misfitting of the shoe, the great toe is compressed in the direction of the other toes. The "abductor"—the principal muscle provided for the purpose of drawing it away from them, thus forming a gap between the great toe and the others, and distributing the area of leverage by which the balance of the body is preserved—becomes stretched, and the joint permanently enlarged, creating serious inconvenience, and making steadiness of walk more difficult. The natural instinct by which this defect is remedied is by turning the foot itself inwards. I remember a supposed remedy for this defect being carried out by having the shoes made with pointed toes turning outwards, obviously to the still greater increase of the evil to be remedied. I also well remember that the village shoemaker of my native place, when taking his measures, would ask, "Do ye like 'em to poonish ye a bit?" though, whether you wished it or not, he would infallibly punish you, and then complain of the awkward shape of your feet.

How many are there at the present day whose great toe is not thus 'adducted,' more or less permanently, and the joint enlarged in this manner? Again, facility of balance, upon which gracefulness largely depends, is quite impossible with high or pointed heels. Follow a pair of high heels, and you may observe the wobbling of the ankle, which indicates the undue strain thrown upon the hips and spine. They are also commonly accompanied by the treading down of one side of the foot. Putting the heels upon stilts reduces the power of the lever by which the balance of the body, in an upright position, is preserved; and arching the shoe, to fit the span of the foot, is very much like the shoring up the keystone of an arch to prevent its falling. The barbarity of the Chinese in transforming by pressure the heads and the feet of their infants is well-nigh outdone by the barbarity of the fashion which subjects the growing bodies and feet of the English to such indignity and inconvenience. Young persons, whose constitutions have been injured by such means, are further led to delude themselves into the idea that bands and belts are necessary for the support of their enfeebled frames, in ignorance of the mechanical law that although lateral cinctures may add considerably to the strength of a post or column in a building, and that lateral support may be needed in the case of strains, injury, or weakness of muscle, such pressure takes away from the force of their free and natural tension, torsion, and contraction, and that under continuous pressure the muscle gets a permanent set or indentation which can be recovered only by long and persevering exercise. I have known a lame child improve in his walk and in his general health from the very time when his high stilted boot, which had been provided to make up for his shortened leg, was removed. Gustavus Adolphus cured his ague by the constant and persevering exercise of his muscular system. I have myself witnessed the daily fatigue of an exhausted body gradually

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

and entirely disappear under the rational use and exercise of a rational system.

From these extracts it will be seen that Mr. White writes vigorously, and with a firm belief in the justice of the cause he espouses. His remarks on "stooping" will also bear quotation :—

Let us now consider stooping. Many are the parents and many the teachers who still advocate and administer the use of the back-board, whether the old-fashioned straight one, or the more modern elastic form, which is indeed still worse as a remedy for rounded shoulders. The weary hour spent in the vain imitation of a trussed fowl is calculated to produce the very opposite result to that which it is intended to have. If the muscles are reduced by force into a constrained position for any length of time, they lose their elasticity, and the apparent amendment is not healthfully produced. But not even an apparent improvement will be permanently secured. The shoulders being fixed in a backward position, the natural and instinctive tendency of the opposing muscles is to act with yet greater force in a forward direction, thus increasing the evil. As illustrating this prevalent evil, together with its popularly supposed remedy, and comparing this with the true and proper cure, it may be instructive to observe that part of the rational and natural treatment for this defect is the pulling of the arms forward by the teacher or operator. This has to be done with great judgment and care. By this means an active resistance is made which exercises its influence in the reduction of the shoulder-blades to their normal position.

It would be impossible to estimate the amount of unnecessary mutual irritation between parent and child, between teacher and pupil, occasioned merely by the recurring reprimand, "Now, do sit up," "Don't stoop," sharply spoken, without a thought that a knowledge of anatomy, and systematic teaching in the right use of the joints, and especially of these joints, are requisite in order to impart to the child that self-command without which all other such commands must in reality be futile. The lower joint of the neck probably will be left passive, the upper joint having to do double duty, whilst the proper result is simply unattainable without actual training. The poking neck, whether in a girl or boy, may indeed easily arise from so slight a thing as an ill-fitting dress or collar.

This has been called a small volume, and, as regards size, it certainly merits that term. But every page teems with wholesome health-truths, forcibly expressed; and we can, on this account, very cordially recommend Mr. White's pages to the notice of our readers.

A USEFUL COOKERY BOOK.

Cookery for Invalids, Persons of Delicate Digestion, and for Children. By Mary Hooper. (London: Kegan Paul, Trench, & Co.) 1883. Third edition.

We are glad to notice that this useful book has attained its third edition. Its success is thoroughly well deserved. The authoress writes on the principle that "Dr. Diet and Kitchen Physic" are acknowledged "as the best friends of the medical profession." Her subsequent remark, that a doctor has an anxious time of it "when he hands over his patient to the good offices of the cook," is also a highly correct observation. Proper food, properly-cooked food, and tastily-prepared food, given at proper times and in proper quantities, form, in truth, the sheet-anchor of medical treatment in three-fourths of the cases which meet the eye of the doctor. Speaking even of the homely "gruel," in her preface, the authoress says :—

Thus it is that gruel, which in former times was said to "gratify nature" and to be the king of spoon-meats and the queen of soups, and which played so important a part in the sick dietary, has fallen into disrepute. The fact is that in these days few persons know gruel except as manufactured from the starchy preparations, the chief merits of which appear to be that they "can be made in ten minutes"; and it is, therefore, no wonder so much dislike is expressed for it.

The delicious, creamy, nourishing, one may almost say elegant, gruel, made by the hands of our grandmothers for their invalids, is now hardly known among us. It was either made from groats, crushed in the household mortar, or bought specially prepared, and known as "Embden groats," and was in either case admirably suited for the purpose. After many hours' boiling the gruel was carefully strained, and was then ready to be served plain, or flavoured, as the case might require. We can hardly wonder in these days that gruel is so unpopular, being what it is—a "patent" hasty compound manufactured to suit the slovenly and impatient culinary habits of the period—or that doctors have almost ceased to order it as an especially useful and restorative diet.

The present writer well remembers her mother, whilst relating to her the sorrow and distress of the nation at the premature death of the Princess Charlotte of Wales, adding it was reported that the Princess shivered when a basin of gruel was presented to her, as though such antipathy was a measure of the hopelessness of her case. But it is no bad symptom *now* when ladies shiver at the sight of gruel, but rather an indication of a true taste which revolts against impure and badly-prepared articles of diet. Gruel made as it ought to be is rarely disliked, and is more nourishing, and in many cases to be preferred, to arrowroot—an expensive thing, and one most difficult to procure genuine.

One hint of a highly useful kind is given by Miss Hooper in her Preface, namely, that where the invalid's food "cannot be properly supplied from the kitchen, a lady, by the aid of a small gas-stove, can readily prepare it." An equally important remark is that which holds that "'kitchen physic' will never be so efficacious as when the invalid knows it has been prepared by loving hands. The mother, wife, or daughter who trusts these duties to no lower love than her own, will surely receive the dearest reward in the knowledge that the pleasure with which food is eaten enhances its value in every sense."

We quote several of the recipes contained in this useful volume, which should find a place in every home.

Restorative Gruel.—This delicious substitute for groat gruel is made as follows :—One ounce of rice, one ounce of sago, one ounce of pearl barley; put three pints of water, and boil gently for three hours, when the liquor should be reduced to a quart. Strain it in exactly the same manner as groat gruel, and flavour with wine, brandy, or anything else that may be suitable. If made a little thicker, say with an ounce and a half of each ingredient to three pints of water, a jelly will be produced, which may be eaten cold with sugar, fruits, syrups, or preserve.

Rice Cakes.—Mix two ounces of ground rice with six ounces of flour, and one teaspoonful of baking powder, rub in an ounce of fresh butter and two ounces of sugar. Beat up an egg in a quarter of a pint of milk, with a little lemon flavouring, have ready small patty-pans rubbed with butter, half fill each with the cake mixture, put immediately into the oven and bake for fifteen minutes.

Fruit Pudding for Children.—Make a crust in the proportion of four ounces of suet to six of flour, a pinch of salt, and water to make a stiff paste, roll it out thin before putting into a buttered basin, then add the fruit mixed with sugar, except in the case of apples, which are sometimes hardened by boiling with sugar; put on a lid of paste, and boil the pudding an hour and a half. Care should be taken to roll the crust thin, in order to get as much fruit as possible into the pudding. It is a good plan to stew a little fruit, and serve it with the pudding, as it should be given to children in large proportion to the crust.

Egg Drinks.—These are most useful, and may be made in almost endless variety. Beaten up with milk or cream, with wine or brandy, in tea and coffee, as a substitute for milk, eggs are equally useful. For tea or coffee, beat up the yolk of an egg with a little sifted sugar, and a spoonful or two of milk or cream. Pour the tea from the pot on to it, stirring with one hand, and pouring in the liquid with the other. Proceed in the same manner for hot wine or spirit drink. For any cold beverage the white of the egg can be beaten up with the yolk, a little sugar added, and the liquid gradually mixed with the egg. On account of the difficulty of mixing the white of an egg with hot drinks, it is often omitted; but it should be used, whenever possible, as the albumen is very valuable. Curdling will be prevented if the yolk and white are beaten together for five minutes, and care must be taken to have the liquid several degrees below boiling-point, when adding it to the egg.

Beef Jelly.—This is often very useful. It is much better to

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

prepare it in the following manner, than to subject the meat to such long boiling as will produce sufficient gelatine to set the jelly. Make extract of beef as directed for beef-tea, adding no water and but little, if any, salt. For a quarter of a pint of the extract, soak the eighth of an ounce of Nelson's gelatine in a tablespoonful of cold water, and when sufficiently swelled, boil it until dissolved. When the extract is nearly cold, stir in the gelatine, and when set, it will be ready for use. By using a little ice to facilitate cooling, this beef-jelly may be prepared in less than an hour.

A GUIDE TO HEALTH RESORTS.

Health Resorts and Spas, or Climatic and Hygienic Treatment of Diseases. By HERBERT JUNIUS HARDWICKE, M.D., F.R.C.S.E., &c. (London: W. H. Allen & Co.) 1883.

THIS is a handy guide to the principal British and Continental resorts. The leading characteristics of these places are given, and an introductory chapter on the treatment of disease by climate will be found to present a succinct summary of the principles which regulate the selection of a climate wherein an invalid may hope for relief or cure. Information is also appended regarding the use of water in the treatment of disease, and the properties of mineral waters. The work is marked by accuracy, and its handy form is not the least of its recommendations.

Sanitary Appliances, Etc.

THE BANNER SYSTEM OF SANITATION.—This system of securing our hearths and homes against the unseen but all-powerful intruders, which, in the shape of sewer-gas and other elements, threaten our health and prosperity, deserves the careful attention of all who are interested in the scientific safety of their dwelling-places. The invention of Mr. E. Gregson Banner, C.E., this system is founded on an accurate appreciation of the difficulties which stand in the way of successfully managing the "gases" that are inevitably generated in drains, and on a scientific knowledge of the

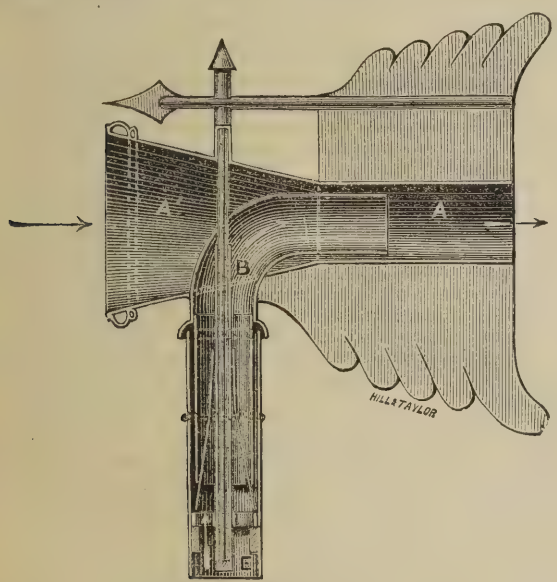

Fig. 1.

principles on which the efficient ventilation of the drains, &c., can be secured. The fight against sewer-gas is an essential part of every sanitary system. Sewer-gas is the medium in which not only typhoid fever, but diphtheria, cholera, dysentery, and other diseases, grow and germinate. It is the soil in which the "germs" of these diseases breed and flourish. Hence, in attacking the problems connected with sewer-gas, and in showing how this enemy of health may be excluded from our homes, Mr. Banner has attacked—and we think has, in one way, solved—one of the chief problems of modern hygiene.

The illustration (Fig. 2) will render clear to all the defective conditions which are only too well known in houses even of the highest class. Here an ordinary pan-closet exists, with all its tendency to generate foulness. The inefficient D-trap is also seen, and the overflow of water from the cistern is shown (as is often the case) to be led directly into the trap, which is a receptacle of sewer-gas. From the trap, goes off the soil-pipe—a closed tube, containing a permanent legacy of foulness in the shape of a column of sewer-gas. Baths and sinks in connection therewith are therefore mere outlets for sewer-gas escapes; and a house thus provided with, as often, as not, basement drains of deficient nature, becomes a permanent harbour of conditions alike fatal to home-happiness and prejudicial to health.

Contrasting with this state of matter, with its filthy pipes coated with sewage matter and receiving no ventilation whatever, the "Banner" system, we see firstly that the soil-pipe becomes a clean

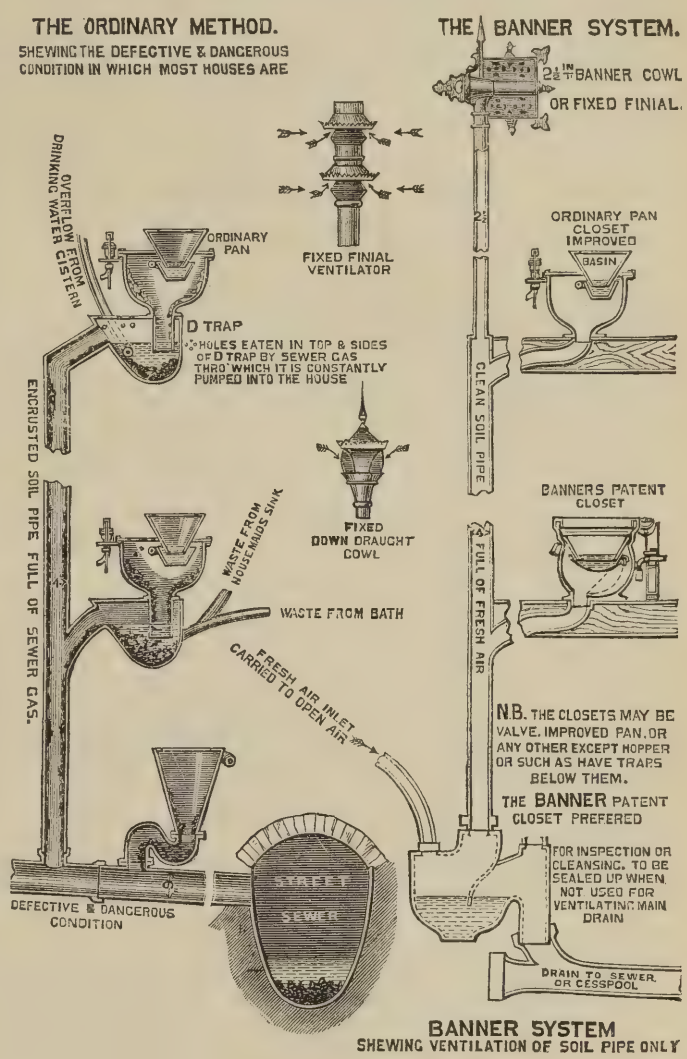
THE ORDINARY METHOD.
SHEWING THE DEFECTIVE & DANGEROUS CONDITION IN WHICH MOST HOUSES ARE
THE BANNER SYSTEM.
2½ IN BANNER COWL
OR FIXED FINIAL.
OVERFLOW FROM DRINKING WATER CISTERN
ORDINARY PAN
FIXED FINIAL VENTILATOR
ORDINARY PAN CLOSET IMPROVED
BASIN
D TRAP
HOLES EATEN IN TOP & SIDES OF D TRAP BY SEWER GAS THRO' WHICH IT IS CONSTANTLY PUMPED INTO THE HOUSE
CLEAN SOIL PIPE
ENCRUSTED SOIL PIPE FULL OF SEWER GAS.
FIXED DOWN DRAUGHT COWL
BANNERS PATENT CLOSET
WASTE FROM HOUSEMAIDS SINK
WASTE FROM BATH
FULL OF FRESH AIR
FRESH AIR INLET CARRIED TO OPEN AIR
N.B. THE CLOSETS MAY BE VALVE, IMPROVED PAN, OR ANY OTHER EXCEPT HOPPER OR SUCH AS HAVE TRAPS BELOW THEM.
THE BANNER PATENT CLOSET PREFERED
FOR INSPECTION OR CLEANSING. TO BE SEALED UP WHEN NOT USED FOR VENTILATING MAIN DRAIN
STREET SEWER
DEFECTIVE & DANGEROUS CONDITION
DRAIN TO SEWER OR CESSPOOL
BANNER SYSTEM
SHEWING VENTILATION OF SOIL PIPE ONLY

Fig. 2.

wholesome pipe, *full of fresh air*. The old pan closets are replaced by others of new pattern, and constructed on scientific principles. There is plenty of scope for free flushing, and all noxious odours are in this way avoided. The basement trap or syphon has an inspection opening (as shown in Fig. 2) and a "fresh air inlet." Oxygen, Nature's own disinfectant and purifier, is thus everywhere invited to step in and destroy the foulness of drains. The soil-pipe above is furnished with a "Banner Cowl" and with a "fixed finial ventilator" (Fig. 2). A section of "Banner's Rotating Cowl" is shown in Fig. 1, whilst the "finial ventilator" and a "fixed-down draught cowl" are also shown in the illustrations. The object of these cowls is that of actually extracting the foul air, and the ideal

ventilating system, that of replacing foul air by fresh, is thus practically illustrated in the "Banner" apparatus.

All details of this excellent system of house-sanitation—already adopted in many leading hospitals, mansions, offices, &c.—will be cheerfully afforded by Messrs. Banner Brothers & Co., 11, Billiter-square, London, E.C. We must not neglect to mention that this firm manufacture ingenious and efficient sanitary apparatus, to be used in the improvement of our home health. Their "air-tight man-hole covers" for drains, &c., are favourably known all over the world, and the "Banner Patent Closet" is also an example of apparatus which has tended to make the closet-system absolutely safe and free from all inconvenience and trouble. The "Banner traps" are ingenious and effective, and we have been specially pleased with their "grease-trap," which is a necessary addendum to every sink, &c. Their "traps," it may be added, are constructed of "rustless iron."

Altogether, we are of opinion that in Messrs. Banners' appliances, and in their system of sanitation under which these appliances come into use, householders, architects, and others are provided with a means of ensuring "healthy houses" which is second to none. The system richly deserves the encomiums which have been passed upon it by medical men, sanitarians, and architects; and the simplicity of the means used is by no means the least recommendation this system should present to the eyes of the householder.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to "The Publisher," at the same address.

Contributors are requested to send stamps for the return of the MSS. in event of non-acceptance. Every care will be taken to ensure the safety of MSS., but the Editor and Publishers cannot hold themselves responsible for accidental loss.

Correspondents are requested to write on one side of the paper only. The Editor disclaims responsibility for the opinions expressed by Correspondents.

LETTERS TO THE EDITOR.

CHOICE OF SITE FOR DWELLING.

Sir,—Some weeks ago a letter in the *Daily News* from a distracted house-hunter gave rise to a series of correspondence on the somewhat momentous subject of the selection of a "local habitation and a name."

The correspondence afforded a good illustration of the difficulty which many find in making up their minds on this subject, and the dearth of information to be had to assist them in so doing. The crux with many seems to be the choice of a site, and prejudice seems to exist on two points. The one is as to soil, the other as to aspect.

The very mention of clay will close many to any further inquiry. A low position with a stiff clay soil is, no doubt, damp; but there are clays and clays, and a clay soil surely may be a dry one from its nature, as where veins of sand or other pervious soil run through it, or where the position is more or less elevated, with a gradient, so that it is naturally drained. Then as to aspect, a great deal of faith seems to be pinned on some particular aspect, which seems often to be confounded with local position.

The aspect of a site can surely only mean the point of compass towards which the site, if on an incline, faces. For instance, a spot on the north or Solent side of the Isle of Wight, if sloping towards the south, would have a southern aspect, its *position* only in relation to the Island being northern. Such a position is, however, not infrequently referred to as if it indicated the aspect of the spot in question, with all the advantages or disadvantages of such an aspect.

I myself, and I believe many others, would feel grateful for some remarks in your valuable paper on the above subjects.—Your obedient servant, Locus Vivendi.

[We shall shortly devote attention to the points mentioned by our correspondent.—Ed. "H."]

EASY AND SIMPLE DISINFECTION.

Sir,—Allow me to draw the attention of your readers to a very simple means for destroying disease-germs in clothes, either as soon as they are removed from the body, or before they are sent to the wash or laundry. The researches of Tyndall on germs have shown that these animalcules cannot live in a temperature of 212 Fah., *i.e.*, of boiling water. The researches of other experimenters show that if vaccine matter be heated above 150 Fah.—I write from memory—that the lymph will not give rise to vaccination pustules. We also know that thorough boiling will kill trichinæ and other parasites in meat. In the country, in summer, people always boil the milk; they find it keeps longer; it really kills any germs which have fallen in it. The dairymaid also knows from experience that scalding her cans—*i.e.*, killing the germs—allows her milk to keep longer. Preserved meats, &c., are always boiled, and then sealed up whilst hot.

These and other well-known facts are the basis for my theme—*i.e.*, that boiling water is a sure mode of destroying any poison germs clinging to the linen of fever patients. As soon as the body-linen of fever patients is removed, or the bed-linen from typhoid and diphtheria cases, it should be plunged into boiling water, and even boiled for a few minutes to allow the hot water to thoroughly penetrate. This will destroy all the germs, and so prevent the spread of disease. In the same way the stools of fever patients might be received in boiling water, and the germs killed. Curtains, dresses of attendants, &c., might all be put through the process, as it is very simple and does no harm. The water then could be thrown on the ground or down the closet without fear of infection. Thus we have a very simple means for the destruction of fever germs, and which, if carried out, will greatly tend to lessen cases of fever. This simple and easily applied remedy does away at once with carbolic acid and other equally useless things. If newspapers will publish this information in their columns they will do a truly philanthropic work. This information can be put in a few lines, or the whole reasoning might be copied. I have tried it in some cases I had lately, and am pleased with it. The means are always at hand, and can always be procured in a few minutes both in the palace and in the cottage.—Yours truly,

T. R. Allinson, L.R.C.P., &c.

34, Claremont-square, Pentonville, N.,
Oct. 5, 1883.

DRESS REFORM.

Sir,—We unfortunate dress reformers are always being tossed about on the horns of a dilemma, between those who sneer at us for not going far enough and those who scold us for going too far.

To pass from the dress which now pleases the fashionably-educated eye to the one which would adorn the lovely statue of Venus, or the still more lovely living, breathing, moving woman, involves such a change in public opinion, taste, and feeling, that it amounts almost to a revolution. Now, such a revolution cannot be effected in a day.

We can only ask those who are "willing to be convinced," to try and separate true from false opinions as to what beauty in dress consists, and to put aside conventional ideas as to what is modest or immodest in women's dress. The sooner this is done the sooner shall we arrive at that "dress of the future," which shall satisfy all the requirements of health, convenience, and beauty.

The subject is certainly not one which has been "threshed out;" on the contrary, the good seed has only just been sown, and it depends on the enlightenment of all good and true men and women how soon the harvest of reform shall be gathered in.—Yours obediently, E. M. King,

Hon. Sec. Rational Dress Association.

34, Cornwall-road, Bayswater, W.

P.S.—If "One Willing to be Convinced" will send me his address, I shall be glad to send him copies of my pamphlets, which bear more fully on the points touched upon in his letter.

DISSEMINATION OF SCARLET-FEVER.

Sir,—The following anecdote will show how scarlet-fever is disseminated. About two or three years ago, a teacher of a Methodist Sunday School, who resides in a small Cornish fishing-town of 3,600 inhabitants, was attacked by malignant scarlet-fever. In a few days she died of it. Her funeral was arranged on a public scale and on a Sunday. To prevent any of the children missing the opportunity of doing her memory honour, a general holiday was given to the school, which proceeded corporately to the funeral. It is needless to say that the scarlet-fever spread over the place, and

almost every child that had not had it before, caught it. The death-rate was considerable. Might there not be a law to prevent things like this? No good is done to the dead and much harm to the living by crowded funerals of persons who die from infectious epidemics.—Yours, &c., W. S. L. S.

HEALTHY HOUSES.

Sir,—It may interest your readers to know that the appliances described and illustrated on p. 13 of your paper have been recently fitted in a West-end house, and are acting extremely well, the water-closet especially so. I would recommend Bean's Direct Acting Water-waste Preventing Cistern to be used with it, as it has no valves, and gives a very good flush. The access lid K in your illustration is most valuable, not only for cleansing, but also for making the joint with the soil-pipe from the inside, and it is a great advantage to make it secure from inside as well as out, for this joint is the most important of all.

I would not advise the use of gully traps if possible for wastes, as it is so difficult to wash out all the sediment, &c. Dent & Hellyer's Waste Receivers are far preferable, and, if necessary, perforated zinc grids can be made to fit them should there be any danger of too much sediment passing into the drain. Sanitas.

QUERIES AND ANSWERS.

[We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*]

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

C. Carr.—See our advertising columns for the information you require.

Armstrong.—Communicate, please, directly with the writer of the letter.

Cecil B.—There is a London office, but the headquarters are in New York, we believe.

Interested.—No; there can be no hesitation in declaring that the whole system is a "fraud." If a man sells a "magnetic" or any other belt, which science proves to have no effect whatever on the body beyond giving warmth and support, he is, after the knowledge of what science declares, guilty of a fraud in declaring his belts to be useful from their magnetic properties. We make no charge for testing belts sent us (pre-paid and with stamps for return), and our sole desire is simply to show the public how many so-called "electrical" articles, ranging from belts to brushes, are in reality pieces of inert mechanism, so far as the body and its ailments are concerned. As for "testimonials," can you point out a single case of a scientific electrician who has testified to the genuine nature of any ordinary "magnetic" belt?

Belton.—See Health No. 25.

Aigburth.—Consult your solicitor. The man is a quack. We may mention that the latest "dodge" of many quacks is to associate themselves with some qualified medical man who has so far forgot what is due to the profession as to link himself with shams. The "Medical Register" is the official record of all respectable practitioners, and no man who is not on the register can be held to be in practice or can charge fees. The public have no right to assume any man to be qualified who is not on the "Register."

A. W. Connor.—Do you think such an advertisement would be allowed to appear if not genuine? We have every confidence in the system.

Memory.—See reply to "A. W. Connor," above.

A. Kitching.—See list of books on Sanitary Science recommended to "Cathcart," in No. 27 Health. Corfield's "Health," Dr. G. Wilson's "Healthy Dwellings," and Parke's "Hygiene" should suit you well.

SANITARY.

A. N.—1. The "wash out" and the "valve" both good. Bostel's should be seen before deciding. 2. We took our account of the "motor" from the *Times* near the date of the number in which we mentioned it.

G. May.—You propose a difficult problem. The only way we can think of solving it is by directing your attention to the paraffin-oil stoves of Rippingille and other makers, to be seen at the ironmongers. Properly used, these stoves give off little or no smell.

W. L.—Lead cisterns may become protected by the minerals of the water. Read our articles (to be found in Monthly Parts I. and II.) on "Water Supply," by Mr. Macadam. In cleaning a lead cistern, no hard brush should be used, as the lead becomes scratched thereby, and is apt to contaminate the water.

Pure Water (Falkirk).—If we could see that a local movement like yours would be aided by our notice of it in Health, we should be very glad to help you. But it seems to us now, as before, that what you want is the rousing of public opinion, in the face of which no Corporation could possibly force an impure water upon a community. Why not apply to the analysts, who are personally interested in preventing the use of bad water? If they have condemned the proposed supply as impure, no Town Council with any reputation for common sense could introduce such a water. Besides, where are your local editors? The matter is one for local agitation purely; if we can further assist you, we shall be glad to do so, and we will think the matter over. Send us any further particulars.

Pure Water (Surrey).—It is evident there are two correspondents who have adopted this name. We now reply to yours. An analysis (costing only half-a-guinea as a rule) is the only certain method of water-testing. There is a test for organic impurity in water by adding a drop or two of a solution of permanganate of potass (Condy's "Fluid") to water. If the colour remains clear and purple and unaltered, the water is pure. If, however, the colour of the solution disappears, or turns rusty red, then oxidation of the organic matter is taking place. Well-water is always suspicious, in our opinion, as its liability to contamination is so great. Use a filter (one of the Silicate Carbon Company's, or Maigner's "Filtre Rapide").

MEDICAL.

W. Green.—The pamphlet you enclose is that of a quack. We believe this person dubs himself "M.D.," of New York. Be that as it may, he is a quack from his prurient behaviour in distributing such pamphlets; and as he is unregistered (see reply to "Aigburth" above), you had better steer clear of him and all his works. As regards your case, read and follow advice to "Anti-Quack" and "Victor," in No. 26 of Health. Be of good cheer; you are not suffering from any disease, and will soon get well. If not better write again. The "belt" is a fraud.

W. Garth.—1. The climate is warm and moist; temperature variable, and tends towards relaxation. It might suit a nervous invalid very well, if not too far south for her. 2. No; if there is sufficient glow and reaction the bath will do good. 3. We prefer the remedy prescribed to "Excelsior," Health, No. 18.

Tangiers.—Try the effects of rest; and occasionally injections of water to which Condy's "Fluid" (one part to ten of water) has been added. A teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily, in a wine-glassful of water, should also do you good. You do not name any cause.

Pœna.—Be comforted; by care and attention to health all will be well. See advice to "W. Green" above. You are highly nervous, without adequate cause, we assure you. Your case is a common one.

W. K. T.—Your teeth should first be seen to. Change your diet completely. Give up tea and coffee, and try cocoa instead. Take milk, soups, puddings, &c., but give up all vegetables. Take also a little of Morson's "Pepsine" with food. Write again if not improved. The pain arises from indigestion.

T. Turner.—1. No; certainly not. Your case is common and curable. 2. Take the tonic above recommended to "Tangiers." 3. Use cold sponging each morning. 4. The deposit is simply a symptom of overwork or anxiety. Use a nutritious dietary—milk, eggs, puddings, &c.—avoiding constipation. A little pure "Vaseline" applied to the parts will also be found useful. Glad to advise further, if necessary.

Edinensis.—A symptom of digestive disturbance. Watch your diet and habits carefully. Abstain from tea and coffee, and make experiments with a view of finding out what agrees with you best. Take a little "Pepsine" with your food.

Fiwick.—See advice to "Edinensis," above, and also to "W. Green" in present number. Keep in mind that what you name is a perfectly natural occurrence in health.

Beta.—Difficult to say without seeing such a case. Why not have a truss made that will keep its place? Your best hope is in such an apparatus, and in exercising all due care afterwards.

Vox Humana.—Yes; communicate with the publishers. Vol. I. will be ready in October, price 7s. 6d. Our monthly parts can be had by ordering of any newsagent or the publishers.

E. J. Ross.—See reply to "Fiwick" above. You suffer from no disease, but only from irregularity, which attention to advice given above should cure. See also reply to "W. Green" in present number.

J. Jackson.—Such symptoms as yours are very common as the result of general indigestion. Send us a fuller account of yourself, food, habits, &c.; and meanwhile try a little "Pepsine" with your food.

Designer.—Take "Æsculap" or "Victoria Offner Bitter Water" every morning for a time, and thus relieve the constipation, to which you owe your trouble. If not relieved, write again.

H. P.—Read our papers on the "Hair," which you will most conveniently find in Monthly Parts I., II., and III. of Health. See that your boots do not compress your ankles; this a common cause of cold feet.

H. M. C. S.—Yes; you suffer from acne. For this try washing the parts at night with soft-soap and flannel, and thereafter use hot soft water. Try Kummerfeld's lotion, consisting of two drachms precipitated sulphur, ten grains camphor, one scruple powdered gum acacia, lime and rose-water of each two ounces. Apply at bed-time, and rub off the sulphur next morning without wetting the skin. Avoid chills, and attend to general health.

D. G.—The inhalation treatment is good. See advice to "W. Scott" in Health, No. 24. Continue your tonics.

Student.—Your symptoms arise either from overwork or from dyspepsia. Take the tonic recommended to "Tangiers" above thrice daily before food. Write again if not improved.

Paracelsus.—Try the effect for a few nights of fifteen grains bromide of potass taken in a wineglassful of water at bed-time, on alternate nights. Such a simple remedy may possibly cure you, but, if not, kindly write again and we shall advise further. There could be no harm in trying one of Pulvermacher's chains applied to the forehead.

Quiver.—See advice to "W. Green" above. Cold sponging, moderate exercise, healthy reading, avoidance of suppers, and of taking fluids late at night will cure you.

F. M. P.—Have no fears for your future. Continue the treatment. Take the tonic recommended to "Tangiers" above, and see also advice to "W. Green."

R. Roberts.—Let us hear how you are after a trial of our advice. Use pure Vaseline as an application to the skin trouble. Try cold sponging and the use of a supporting bandage. Above all, be cheerful in mind.

Neptune.—1. Use pure Vaseline as an application to the lids. Let us know if this cures you. 2. Give up your dinner-tea, and take dinner alone and your tea later on. Occasionally the use of too much tea produces the symptoms of which you complain. The statements in the quack pamphlet you enclose are (as usual) highly coloured, and meant to create alarm.

Box.—You quite mistake the nature of the secretion you name. For the other complaint you mention wear a suspensory bandage. If troublesome consult a hospital surgeon. Use a mineral water (Friedrichshall or Æsculap) in the morning for the correction of your digestive troubles, and for the first-named affection see advice to "Victor" in Health, No. 26.

Inquirer.—Try the remedy recommended to "Paracelsus" above. If not improved, write again.

Highlander.—Not injurious, certainly, if practised in moderation.

S. L.—The person you named we believed to be the author of a book on "Quackery." It is clear we are not speaking of the same person. Give us the person's exact address, and we will tell you at once if he is a qualified medical man. Your former description was not sufficiently clear.

Valjean.—The pamphlet is a tissue of lies from beginning to end—lies, worded so as to play on the nervous fears of ignorant or sensitive persons. These persons should be mentioned to the Liverpool police, to whom we have forwarded their pamphlet. You are not troubled with the affection you name. Try cold sponging, moderate exercise, and be cheeful, avoiding stimulants.

Gratia.—See notice to "W. Green," and take the tonic recommended to "Tangiers," above. Be cheerful, and know that you suffer from no actual disease, but only from a weakness which time and care will mend. Take moderate exercise, but no stimulants.

A Countryman.—From what we have seen of the apparatus you name, we believe it can only act by affording warmth. It has no electrical effects. See Mr. Carpenter's article in Health, No. 20, where his remarks describe all such appliances—of which the name is "legion."

E. Awfurd.—Thanks for the cutting. The Gloucester raid on quacks deserves to be imitated in every town in the kingdom.

A. Waller.—Judge by the skin-reaction. We have never felt that a cold was made worse by the ordinary sponge-bath whenever taken; but we think the plunge-bath should be discontinued in winter. A sponge-bath is safest in your case, with brisk friction thereafter.

Mott.—Depends on the variety. From your description of the treatment ordered, we should say it was not of the more serious variety. Nitrate of silver is not often used now. We should apply glycerine of borax to the sore, and attend to cleanliness simply. Your medical man is the best judge of your case. How long after infection did your ailment appear?

Medicus.—Try a saturated solution of boracic acid. Have you seen recent correspondence in the journals on excessive and fœtid sweating? If not, read the letters. We think in such cases there is a constitutional condition which requires correction by strong tonics. Let us hear how you progress. The sebaceous matter will account for the odour (*e.g.*, as in the ear).

Typo.—We should feel inclined in your case to advise you to attend carefully to warmth, and to avoid stimulants. As a preliminary, try 10 drops *Fer Bravais* in water thrice a-day, and report again in a fortnight.

C. W. J.—You might call and see the electrical bands. Mention by whose advise you do so, and you will receive every information. We think your symptoms are of a somewhat obscure nature; but meantime try the effect of the tonic recommended to "Tangiers," in present number of Health. Glad to advise again, if need be.

Eva.—In your case try the effect for a time of liquid foods alone. Try the "Beef Peptonoids" and Brand's "Beef Essence," alternating them. By such means your stomach may recover its tone. Give up tea and coffee also, and try milk. Take also a little bismuth powder with the meals.

Gardener.—Glad to hear from you again. We think the advice given to "Eva" might benefit you somewhat. The liver is probably congested, but we should not advise you to try strong purgation at all. Slight doses of the water you name ought to do you good. Avoid all vegetable food for a time, andtrt ˙ much as possible to *concentrated* beef foods. There can be no objection to your trying the medicine you name. Tea and coffee had better be given up for a time. Command us, if we can assist you further.

S. M. C.—1. The pain is clearly of rheumatic character. Try hot salt bathing along with inunction with warm oil. If not better, write again, and we will aid your further. 2. You have been needlessly alarmed; such books always make non-professional readers nervous. Don't be anxious; there is no relation betwixt the pain and the condition to which you refer. Have no fear for the future; but exercise your own moral control and try the effect of cold sponging, cheerful society, and don't study over-much. You are by all accounts a healthy man, and there is no reason why you should not continue to be so.

J. Joseph.—Symptoms apparently of indigestion. Try Morson's "Pepsine," as directed on the bottle, along with the food. A little more open-air exercise might (taken with caution) be beneficial. Is your nervous system healthy?

Lady Jane.—We know nothing of the remedy you name, and advise you to have nothing to do with it. It sounds like a quack nostrum if it is not one. The pains, &c., to which you refer depend on conditions which can only be cured by consultation with a specialist in the ailments of women. We counsel you to see some such specialist; and if you do not know of any, we shall be glad to send you (by letter) the names of several who make such cases as yours a special study.

L. M. N.—Yes, the mixture is a recognised one; but it should not be taken continuously. Keep up the strength with Brand's "Beef Essence" and the Carnrick's "Beef Peptonoids." As regards the fees, there is no fixed scale of medical charges; medical men in general practice judge of the fee by the circumstances of the patient; and the parish doctor is quite as entitled to his fee of course when attending a private patient as any other independent medical man. The fee is not excessive, inasmuch as medicine was included. The chief concern you should have is to keep up the patient's strength. A little tea (in which there is no nourishment at all, remember) would do no harm.

T. Darte.—You consulted a firm of infamous quacks, who have been figuring of late in the police-courts. Their "belt" is worthless. You suffer from no disease. Take the tonic recommended to "Tangiers," in present number of Health, and practise cold spong-

ing each morning. What you name is a common occurrence in all healthy persons.

Tea.—The prescription you enclose is simply a mild digestive powder, given in cases of acidity. We should recommend you to take a generous dietary, taking a little good claret at meals. Morson's "Pepsine," at meals, would also aid you. The pains you name are indicative of indigestion. Rest after food. Are you closely confined in your business? If so, moderate open-air exercise will do good. If any kidney affection existed, it is hardly likely it would have escaped the notice of the medical men you consulted.

J. F. H.—Try the effect of 15 grains of bromide of potass dissolved in a wineglassful of water, and taken on going to bed. You are simply highly nervous; endeavour to think better of yourself. There is no disease present that we can discover from your statement.

H. F. Talbot.—Use a little "Pepsine" with your food, and try a little good claret along with your meals. Your cure must be mental as well as physical: try to overcome your morbid fears. Glad to be of any further service.

Toujours Loyale.—Your last makes clear to us what you mean. That absorption of carbolic acid may occur is not denied. But it is difficult to say exactly how the symptoms appear. These latter are at the best obscure. In one case we have looked up, there were brain troubles resembling acute mania, and there were also symptoms connected with the kidneys, &c. If you send address we will transmit report of the case to you.

Norvicensis.—It is very surprising to hear that the use of the lotion has turned the colour of the hair. There is no ingredient in it of the nature of a dye. We fancy there must exist some special peculiarity in your case. Give up the lotion and try simply Rowlands' Macassar Oil for a time, dispensing with all other remedies, and let us hear the result. Thanks for your kindly wishes. You might omit the oil from the first-named lotion on p. 135, but try the Macassar Oil first.

Dim Sight.—1. No: constant writing alone would not account for it, but added to weak health the writing might injure the sight. 2. Inject Condy's Fluid (1 part to 10 or 12 water) with your nose-syphon. 3. Eat Bragg's Charcoal Biscuits, and look well to your teeth. The oil will do no harm.

Cardiac.—All the symptoms are those of a digestive disturbance, not of actual organic disease—as, indeed, you were rightly informed. A little weak spirits and water will do you no harm along with food. Give up bathing in winter, and try the tonic recommended to "Tangiers" in present number of Health. You should be perfectly capable of regulating your health wisely. Glad to assist further, if need be. Look well to your digestion, and avoid late suppers.

A Bookbinder.—1. Yes; persevere as you are doing: there are thousands doing as you do, with the best results. The risks of the opposite course are more than enough to deter any one from advising it. Your future step, which we gather is near, will find you strong and well. 2. No medicine required. Simply attend to your health. For the indigestion, try a little Morson's "Pepsine" with food. Nothing more required.

C. H.—1. We believe it is contagious; but only so where a person with the disease *fully developed* is in contact with another. 2. The powders are probably astringent in their nature. The reverend gentleman is a quack of the purest water.

Riminton.—Glad to be of any service to you. The symptoms are likely to be those of worms. Use injections of salt and water; avoid uncooked vegetables, and eat salt with your food. A little Vaseline may be used to allay the itching. Give up tea for a time. Use Bragg's Charcoal Biscuits for the stomach and breath, and try the lime pills ordered to "Caput" in No. 27 Health.

J. F. R.—As absorption is a general matter, and is often rapidly diffused by lymphatics, as well as by veins, your project, whilst ingenious, is hardly feasible. Again, as in snake-bite, no antiseptic or antidote seems to be of service equally in all cases. We prefer Sir Thomas Watson's idea of excision or the actual cautery.

Resurgam.—Don't attribute every trouble in life to the cause you name. We advise cold sponging, sleeping on a hard mattress, cheerful society, and a non-stimulant dietary. Bromide of potass is decidedly lowering if taken constantly and in large doses. At your age society and books and the thousand other aims life presents should surely afford a moral regimen.

Teri, No. 2.—No; not dangerous at all, but often a sign of health, if not too frequent. Certainly not; do not give up the object you had in view. The curse of quacks is that they often embitter, by their fulsome lies, a whole existence.

Glasgow.—You suffer from varicose veins. Keep your feet on a pillow when in bed, so as to favour the return of the blood. Wear an elastic stocking. Avoid standing as much as possible, and see that no constipation exists.

F. W. D.—1. No; a sign of health rather. 2. We do not know anything of the dispensary you name. Send us the names of any of the "officers," and we will tell you if they are registered practitioners.

Undergraduate.—The prescription is a soothing one rather than a tonic. Try Fellow's "Syrup of Hypophosphites" for a time, as prescribed to "Tangiers" in present number of Health. Drink plenty of milk, and take a light, but nutritious, dietary—eggs, puddings, &c. A cold sponge-bath, if you have sufficient reaction, should do good; but your great sheet-anchors are rest and fresh air.

A. S. W.—1. Apply to a chiropodist who has experience in dealing with nail-troubles. There is no cure but a radical one, which a Glasgow chiropodist would apply. 2. Try cod-liver oil emulsion for the cough, with the following:—Carbonate of ammonia, 1 drachm; tincture of squills, 3 drachms; compound tincture of camphor, ½ oz; infusion of senega to make up 6 oz. A tablespoonful every four hours. 3. Glycerine and cream are often used as substitutes for cod-liver oil.

J. H. M.—You may take the mixture plainly and by itself; a little water added, however, will do no harm. You might try the system of inhalation recommended to "W. Scott," in No. 24 Health. You should not take the medicine as frequently as you mention. It is apt to lose effect if so used. Why not try how the mild air of Southport agrees with you? Datura stramonium is preferable; but you should not use this whilst you are taking the mixture.

Cath.—Read our papers on the "Hair," which will be found in the first three monthly parts of Health. You will find depilatories given therein; but only a specialist in skin diseases can apply that most effectual, namely, the electrical method.

W. M. M.—Pamphlet received. Author not on the "Medical Register," 1883, although apparently (from his own statement) a qualified man. The pamphlet is simply a means of unprofessiona publicity.

W. Martin.—Leave off the pomade for a time, and rub in a little Rowlands' Macassar Oil to the roots morning and night. No; don't buy any "Restorers." Let us hear how the oil serves its purpose.

Athlete.—Please state fully what you mean by such "debility." The causes are manifold; but are made much of by quacks, to terrify the ignorant and unwary.

W. F. C.—See advice given to "H. M. C. S." in present number of Health, regarding acne (from which you suffer), and its removal.

Influenza.—Don't sleep with your bed-room window open at bottom. See our "Note by the Way" on Hinckes Bird's plan (Health, No. 26, p. 1). Try what the inhalations recommended to "W. Scott," in Health, No. , will do. Frequently such attacks are only a symptom of general bodily weakness. A trial of cod-oil for a time, in winter, should also be made. Cold sponging (to the chest alone) and brisk friction thereafter, should also aid you.

W. S. M.—1. Constitutional treatment by cod-liver oil, or (the emulsion) to which syrup of iodide of iron has been added. Warm clothing and good food. 2. No "belt" can be of any use in such a case. The gland troubles are only an evidence of constitutional affection.

Scotus.—The pamphlet is that of a filthy London quack, whom we intend to expose shortly. We have sent the pamphlet to the Leith Superintendent of Police. His "Restorer" is a fraud, pure and simple; and as for the "medical men" who testify to the merits of the "Restorer," their names are not in the present "Medical Register."

Melancholia.—No; a little beer will do you no harm. Taken at night it should assist in curing the sleeplessness, for which try 15 grains bromide of potass, in a wine-glassful of water, each alternate night on going to bed. If a tonic is required, try that recommended to "Tangiers" in present number of Health.

New Sub.—No means known of increasing tooth enamel. See our article on "Teeth," in No. 1 of Health. Use precipitated chalk as a dentifrice.

Galvanic.—Conditions all depend probably upon a displacement. You should have no hesitation in applying for medical advice, which alone can restore you to health. Rest assured you will be treated with all delicacy, as such cases are quite common in medical practice.

Diamond.—By all means cultivate regularity in habits of feeding, and you will find the stomach will respond in its turn. It is not necessary to "gorge" the stomach with food, even if three or four meals a day are taken. Each individual should judge for himself and herself the best foods, times, and quantities. See Dr. Swanwick's concluding remarks, Health No. 26, page 6.

A. B. C.—No; no such connection with the secretion you name. Why not apply at a hospital and undergo a thorough examination?

Hopeful (Newport).—Try "Victoria Offner Bitter Water" instead. No need for such a "bath" as you mention. You must find out by experiment the food which suits you best—fruits, &c. The "losses" you name, as likely as not, have nothing to do with your condition.

Lex.—There can be no harm in giving the treatment a trial. Try a saturated solution of boracic acid as an outward application for the perspiring parts.

A. B.—See our remarks on "colds" in "Notes by the Way," No. 27. For the pain, try a little "Pepsine," to be taken along with your food.

Radcliffe.—No; no fear of consumption. You might try cold sponging, if you have sufficient reaction; and gentle tricycle exercise is to be recommended. You might give a trial of the medicine ordered to "X. Y. Z.," in No. 26, Health, page 15.

Singer.—"Granular laryngitis" has no existence, but "granular pharyngitis" is well known. You could not see "granules" in your own larynx. You must have them painted by a surgeon with lunar caustic solution, or with chloride of zinc solution (15 or 20 grains to the ounce of water). Overstrain of voice and general weakness cause this trouble. Rest your voice completely for a time, and take the tonic recommended to "Tangiers," in present number of Health. You must see a medical man. The cautery at a dull red heat is often used in this affection.

Anxious Doe.—Your letter is certainly a long one. We adopt your second suggestion. We do not know the magnetic appliances you name; but if you will forward them to Mr. Carpenter, 36, Craven Park, Harlesden, London, N.W., he will be glad to say whether there is any "virtue" or not in them. The word "magnetic" is suspicious. We have sent him your pamphlets. Repeat your other queries from time to time. We will retain your MSS. to save you writing afresh.

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KOLA.

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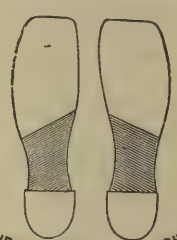

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No. 7, 5 feet 6 inches long by 5 feet broad—27 feet 6 inches.	
Chintz, at 8½d. per square foot	0 19 6
Sateen, at 10d. per square foot	1 2 11
No. 8, 5 feet long by 6 feet broad—30 feet.	
Chintz, at 8½d. per square foot	1 1 3
Sateen, at 10d. per square foot	1 5 0
No. 9, 5 feet long by 4 feet 6 inches broad—22 feet 6 inches.	
Chintz, at 8½d. per square foot	0 15 11
Sateen, at 10d. per square foot	0 18 9

All orders must be accompanied by Cheque or P.O.O. made payable to Messrs. Newham & Co., Feather Purifiers, Boston, Lincolnshire, which, to ensure safe delivery of Goods, may be post-dated ten days. Feathers only 9d. per lb. The trade supplied. Please mention this paper.

HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, OCTOBER* 26, 1883.

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Notes By the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE lecture-season has once again come round, and finds an eager public awaiting instruction in arts, sciences, and literature. There is an increasing demand for information on "Health-topics," and the "popular lecture," it need hardly be said, serves as an important medium for the diffusion of knowledge of sanitary laws. We have already alluded to the work of the "Combe Trust," which manages the estate of the late George Combe; that estate being applied to further, by lectures, &c., the spread of physiological teaching as the basis of physical well-being. This year the Combe Trustees, in addition to subsidising courses of Health Lectures at Brechin, Hamilton, and elsewhere in Scotland, have despatched their lecturer, Dr. Andrew Wilson, Editor of HEALTH, to deliver the "Combe Lectures" on Physiology at Burntisland, Dalkeith, Alloa, and Airdrie; while Leith and Falkirk are to receive the benefit of "Health Lectures" by Dr. Wilson, under special arrangement with the Trustees.

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DR. WILSON'S lecture-dates are as follow:—Hamilton, two lectures (delivered), Oct. 9 and 16; Leith, six lectures, on Mondays, beginning Oct. 22; Paisley, eight lectures, on Tuesdays, commencing Oct. 20; Burntisland, eight lectures, beginning Wednesday, Oct. 24; and Dalkeith, eight lectures, the first having been given on Thursday, Oct. 25. Three lectures on the "Nervous System and its Work," fall to be delivered by Dr. Wilson before the "Greenock Philosophical Society" on the three Fridays beginning Oct. 26; the old year's programme ending with a "Health" Lecture at Alexandria, N.B., on Dec. 19. The year 1884 will find the Combe Lectures delivered in February and March at Alloa and Airdrie, while six "Health" Lectures also fall to be given at Perth and Falkirk, in the spring. The "Gilchrist" Lectures are to be delivered this year in Scotland by Mr. W. Lant Carpenter and Dr. Wilson; these lectures having been granted to Hawick, Peebles, Jedburgh, Selkirk, and Galashiels. Mr. Carpenter delivers his three weeks' course in these towns in December, 1883, his subject being "Electricity." Dr. Wilson's topic, dealing with the "Lower Forms of Plant and Animal Life," will be presented to the same towns during January, 1884.

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IT may interest our London readers to know that arrangements have been completed for the delivery of four lectures by Dr. Andrew Wilson, in Princes'-hall, Piccadilly, on "Brain, Nerves, and their Work." The lectures will be given during the Christmas holidays, at 8 p.m. on the evenings of December 27 and 31, 1883, and of January 2 and 5, 1884. As the lectures will be fully illustrated by diagrams and lime-light views, it is hoped they will prove acceptable as a means of popular instruction during the holiday-season. Mr. John Flack, 74, Great Queen-street, will gladly afford every information regarding these lectures.

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WE have received the report of a case, published in the *Sunderland Daily Echo*, in which a bone-setter, who was called in by the father of a boy whose toes had been injured, was allowed to supersede the surgeon in attendance, with the result that the boy, being treated with "essential oils" by the bone-setter, and mortification setting in, the lad died of tetanus, or, as it is popularly named, "lock-jaw." This case is only one of many in which regular, scientific advice is superseded by quackery. Doubtless the bone-setter did his best; but that best—namely, applying "oils" to a wounded foot—was not the treatment which the case urgently demanded, and which, but for the ignorance of the father and of the bone-setter combined, the lad would have received.

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"BONE-SETTING" has often been described as a special "art," but in the case before us, there were no special features demanding the interference of the "setter." The case was a purely surgical one; it was, moreover, apparently, a serious case from the first; and no "bone-setter," who possessed a regard either for the lad's safety or his own credit, would have ventured to interfere with the surgical treatment which was being adopted. Those who wish to know the rights and wrongs of bone-setting, should read a work on this subject by Dr. Wharton Hood (Macmillan & Co.), entitled "Bone-setting, so Called." Therein will be found full details of the nature of "bone setting," as practised by a famous and well-known setter whose mode of treatment Dr. Hood was privileged to witness and examine.

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THE Dean of Bangor's diatribe against tea-drinking in excess has called forth a vast number of comments, just and unjust. Filtered out, these criticisms present us with nothing that is novel or which the physiologist and health-reformer has not pointed out and declaimed times without number. As we recently noted, those who are well nourished may drink tea once or twice a day with safety and advantage, although it is more than probable that even well-nourished persons take on the whole more tea than is good for them, and that there are thousands with whom cocoa would agree better, cannot be doubted. But in the case of the poor, who regard tea as the sheet-anchor of their nourishment, the case is very different. Not only do they obtain little or no "food" in their tea, but the quality of the tea they are able to purchase is often beyond criticism. Social reformers must perforce regard tea as the enemy of the poor, since it supplants true foods, and in this light is to be strongly condemned.

It would appear that America drinks every year 58 millions of pounds of green tea, and only 5¼ millions of black tea. We import about 215 million pounds of tea, whereof 40 millions are exported, about 207 millions being black tea, and the remainder green. Now, the effects of green tea and of black tea on the nervous system are very different. It is the former which is most powerful in affecting health, black tea possessing only a mildly stimulant effect when compared with green tea. This excessive use of green tea may possibly account for the nervous dyspepsia regarding which American physicians speak and write so strongly.

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The following details should prove interesting in connection with our recent articles on "Type-Writers and Writer's Cramp." Dr. Vigouroux publishes in the *Paris Médical* a case of this intractable affection which was successfully treated by the actual cautery (that is with a heated iron). The first application took the form of three rows of cauterised points on the posterior surface of the forearm reaching from the elbow to the wrist. Relief was immediate, and three days afterwards the improvement was still marked. The operation was repeated at the end of a week and of a fortnight respectively. On the third occasion a row of points was marked out over the back of the hand and along the little finger, which had long been the seat of severe cramps and pains. Three other repetitions at intervals of three weeks resulted in a complete and unlooked-for cure.

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Dr. Vigouroux describes a method of treating writer's cramp practised with much success by Herr Wolff, a calligrapher of Frankfort. Two cases of an obstinate kind, treated under Prof. Charcot's supervision by various electrical methods without permanent benefit, were cured by way of demonstration after a fortnight of Wolff's treatment. The essentials of the method are gymnastics and massage of the affected muscles. The patient has to execute thrice a day a long series of abrupt movements of the arms and hands. The muscles are then extended and even put on the stretch by the operator or the patient himself, till fatigue overcomes the tendency to spasm. Massage, friction, and slapping are also persistently used, and writing movements practised so soon as the diminished cramp allows. It should be added that the treatment is painless.

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Professor Huxley thinks the public should look out for themselves in the matter of quacks. We cordially assent to this dictum—but as only a specially-educated public can effect this desirable end, and as people are not yet sufficiently trained in health-matters (see the bone-setting case above noted) to distinguish wherein the vice and the pretensions of quackery exist, it follows that the Professor's advice can hardly be followed out in the fashion we could desire. It is perfectly true that in the highest stage of culture we shall all be able personally to superintend the preservation of our own health; but, as a nation, we have not yet reached the degree of enlightenment necessary for the discharge of this duty. Till that time arrives, the quack must be looked after by the policeman—failing this, he must be allowed to ruin health as he pleases. The last result is not one, we imagine, the learned Professor will contemplate in calmness or in silence.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

FIRST PAPER.

Since the publication of Mr. Banting's letter explaining how, through following the instructions of his medical adviser, he reduced his body weight, now about twenty-one years ago, the medical profession has not interested itself in contributing anything towards the solution of the problem of how to maintain moderate bodily proportions. That the question is a pressing and important one is proved by the experience of all classes of the community; and that excessive obesity, or extreme leanness and poorness of blood, are either in themselves diseases, or the results of disease, there can be no question. It is a very great pity that medical men have not investigated this question more thoroughly during the time which has elapsed since Banting's pamphlet was published, thereby, as in too many other uncultivated medical and surgical domains, leaving the door open to all kinds of quackery, and to the use of patent medicines of secret composition. Banting said:—"Oh, that the faculty would look deeper into and make themselves better acquainted with the crying evil of obesity—that dreadful tormenting parasite on health and comfort. Their fellow men might not descend into early premature graves, as I believe many do, from what is termed apoplexy, and certainly would not, during their sojourn on earth, endure so much bodily and consequently mental infirmity." I hope I shall be rendering some service to the profession, as well as to the public generally, in ventilating the observations and views I have made on the subject.

During twenty-one years of professional life and hospital-experience I have seen many cases of obesity, thinness and poorness of blood, both as regards quality and quantity, but during the last three years these subjects have more prominently occupied my attention, on my own account and also on that of my patients. During the long professional period previously adverted to, I have repeatedly been asked by fat people how they may become thinner, and also by lean ones, especially ladies, how they may acquire *embonpoint.* In my own case, the wasting was due to overwork and irregularity of meals, producing indigestion; but on altering my mode of life and adopting the plan subsequently to be described, I gained half a stone in five weeks, and this increase I hope to be able to keep progressing, in the same ratio, up to a healthy standard. With regard to the weight reduction of very stout people, the treatment which I have recommended has, in from three to four months, reduced ladies and gentlemen (the former having predominated in my practice) from 20 to 17 stone, 18 to 15¼ stone, from 15 to 12 stone, from 14 to 11½ stone, and from 12 to 10 stone. My plan, as will presently be shown, avoids a too rapid reduction of weight, this being a great fault of previous so-called *cures*, producing, as they do, anæmia, *i.e.*, poorness of blood, and great physical weakness. Moreover, the Harvey-Banting method,* and other similar plans, not only act too quickly for the good of the patient's health, but are not permanent in their effects, and it is as well at once to state that all who desire to remain of decent bodily proportions should

* Mr. Harvey was Mr. Banting's medical adviser, and recommended the regimen which Banting adopted, therefore the plan should be called *Harveyism* instead of Bantingism.

live by rule, as regards regimen, diet, and other auxiliary measures.

I have investigated the subject from a scientific standpoint, and shall, in these papers, treat it from the points of view of modern anatomical, physiological, and chemical knowledge with regard to the digestive process, and the formation and functions of fat in the economy. I may add that I have applied this knowledge successfully for the practical purposes of treatment, and I trust that the publication of my views and results will draw renewed attention to the subject, and rescue it from the hands of mere empirics and patent medicine vendors. I must here, however, insert a caution, namely, that before any one of the three modes which experience induces me to recommend are put into practice, a competent medical man (the family adviser) should be consulted as to the general state of health and condition of the organs of the individual about to submit to the treatment, and also that its progress and results should be watched by the same recognised authority. The public are very apt, to their own detriment, to act on their own account in medical matters, but they should take a leaf out of medical men's books. When a medical man believes that he is at all seriously out of gear, he selects some one in whom he has confidence, and acts strictly by the directions given, occasionally, perhaps, suggesting that which his own knowledge and experience dictate to be worthy of trial.

In considering the question of obesity, three facts become prominent:—(1) That there are thousands either too fat or too lean. (2) That it is better to be neither, but in the happy mean. And (3) that there is no medical work nor authority on the subject, dealing with it from the modern standpoint. The second proposition needs no proof; the third I hope to render incorrect by publishing a technical work on the subject before long; and the first I will endeavour to discuss in plain language, and to explain how it comes about that people get too fat or too thin; but before this can be thoroughly understood, the ground must be cleared by inquiring into the formation of fat in the body, and other matters of importance.

First, then, let me define my subjects, and then treat them *seriatim*. **Fatness**, and its synonymous terms *obesity*, *corpulence*, *adiposity*, signify a condition affecting the body generally, externally and internally, and leading to the formation and deposition of an excessive quantity of fatty tissue. This disease must clearly be distinguished from mere local depositions of fat which are natural and hereditary to some people and races, as, for instance, in Hottentot women; and also from fatty degeneration which, though it does occur in very fat people, may and does happen in thin ones. **Thinness**, *leanness*, *emaciation* or *wasting*, are nearly equivalent terms, and signify a want, or an absorption, of previously existing fat, and, like the opposite condition, may be natural, or acquired through privation or disease. **Anæmia**, *thinness* or *poorness* of blood, means a condition of the vital fluid which is lacking in healthy quantity and quality in its solid or liquid parts. I will proceed to consider each of these subjects in the order in which they have been given.

TYPE-WRITERS AND WRITER'S CRAMP.

THIRD AND CONCLUDING PAPER.

The uses and manner of working of the type-writer having been described, it remains for us in the present instance to note the characters of the disease which, of all others, the employment of these machines tends to prevent and cure. The term "scrivener's palsy" has also been applied to "writer's cramp,"—both terms indicating that there is an inability to execute with ease the actions involved in writing. Duchenne, the famous French authority, has called the troubles of which "writer's cramp" is an example, "functional impotences." The acts which, in health, were easily performed, become laboured, and finally impossible of execution. No other symptom is noticed. All other muscular acts are readily performed, and it is this single action, that of writing, which appears to be affected. Where the patient earns his living with his pen, the results of this affection naturally become of serious kind; and as other forms of cramp affect other occupations than those of which the pen is the main instrument, it can readily be conceived that the affections in question become of extreme importance, both as regards cause and cure. Piano-players are known occasionally to be affected with a "cramp" allied to that of the penman, and which prevents them striking the necessary chords with precision and force. Violinists have been similarly affected, tailors have been rendered unable to sew, and even dairymen have occasionally appeared in the consulting-rooms of physicians, complaining that they have been unable to milk their cows!

In "writer's cramp," the affection, as often as not, begins with overstrain and overwork. A clerk, for example, who has been overworked in business, and who may, in addition, have been worried by home troubles, finds that his hand aches after even a short spell of writing, and that he does not write so easily as before. Later on, he finds a difficulty in holding his pen, and, as a writer has well remarked, it is at this stage that his downward progress is most marked, should he persevere in his efforts to accomplish his work with his former method and punctuality. Every conceivable means is tried by way of steadying the pen; and finally, in a neglected case, the patient becomes unable to make even a mark on the paper. As Dr. Poore has put it, this loss of writing power may, curiously enough, be the only symptom noticeable. An American patient wrote to Dr. Poore of his case, "that fingers which could guide razors and needle, wield oar and musket, and, though numb with cold, knot and cast off reefs on a wet sail, should yet strike work when called on for the familiar characters of their owner's name, seemed utterly beyond comprehension."

The exact nature and cause of this curious affection are still matters of inquiry. In ordinary "writer's cramp" there is rarely any history or symptom of grave nervous disorder, and even the pain and spasm are only observed when the attempt to write is made. The condition is thus regarded by some authorities as a *local* one, affecting the muscles used in writing and pen-holding, other than the nervous centres which govern these muscles. The muscles which hold the pen (as distinguished from those which guide it) are believed to lapse into a state of chronic and continuous fatigue. One of the most scientific views of this affection is that of Dr. Poore, who tells us that when *one* muscle out of a series, which has been accustomed throughout life to work in harmony with the others

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

becomes wearied and incapacitated for its duties, the work of the whole series is disturbed, impeded, or rendered impossible. Failure of one muscle of the set necessary for executing any act, implies disturbance of the duties of all, and it is probable that to some such condition "writer's cramp" owes its origin.

Concerning the *treatment* of "writer's cramp," all authorities agree in stating that *rest* from all writing-movements (and, indeed, repose of body and mind at large) is the sheet-anchor of the physician. The general health must be seen to; tonics prescribed, if necessary; and the mind eased, as far as may be, of its worries. In the early stages of the disease, complete rest alone often effects a cure. Without rest no case can hope to improve.

It is in the *prevention* of "writer's cramp"—an all-important topic in view of the saving of time, expense, and pain—that the place and power of the type-writers we have described are clearly perceptible. It is quite evident that the manipulation of the keys of a type-writer is utterly different from the work of holding and guiding a pen. Entirely different sets of muscles are brought into play by the type-writer, and its use, alternating with that of the pen, is found to strengthen the general muscular powers, not of one hand only, but of both hands. The use of a type-writer by those who write much, appears to us to be fully justified by considerations akin to those which make *ordinary* exercise an essential part of a healthy life. The good effects of exercise are largely due to the alternation which is secured in muscular work, and to the pleasant change that ensues when different sets of muscles from those employed in work are brought into play. Hence, when a person who writes much, even alternates the type-writer as a means of executing his work with the use of the pen, a valuable and reliable means of preventing the tendency to "writer's cramp" is thus presented to view. There is obviated that tendency to the "fatigue" of muscles which, if not the primary cause, is at least a paramount condition of this disorder; and we may not neglect to add that the pleasant stimulus of change, and the interesting nature of type-writing work, are together elements of no mean value in rendering a writer's occupation agreeable and diversified. We know of novelists and others who rarely touch a pen, even to write a letter, and who execute all their work by aid of a type-writer; while, by aid of a clever-fingered amanuensis—type-writing, in this view, opens up a new field of female labour—the use of one of these machines is found to save an immensity of labour to busy authors, journalists, and others.

We may repeat that those interested in type-writers and their work, will find all information at 6, King-street, Cheapside, London, where the depôt of Messrs. Beeman & Roberts is situated.

COLD-WATER CURE FOR BURNS, ETC.

By W. Mattieu Williams.

"Health" is doing good service in many directions, some being those deliberately premeditated by its founder and editor, while others are unexpectedly developing by a sort of natural evolution. Among these is the opportunity it affords of recording non-professional experiences bearing upon medical and surgical, as well as sanitary matters; trifles that we laymen would scarcely venture to communicate to severely technical papers such as the *Lancet*, &c., but which, though trifling, may be practical, and when summed up together may in time amount to more than a trifle. A short time ago I communicated such an experience on the use of crude paraffin oil in burns, and now have just turned up a stray leaf of *Public Opinion*, of June 30 last, in which is an extract from "a contemporary," describing the application of cold water as a relief in two cases of severe scalds. The contemporary immersed his very badly-scalded hand in cold water, and kept it there for four or five hours, until the pain was greatly reduced on removing the hand from the cold water. In the other case, both the hands of Mr. Contemporary were scalded by a mixture of boiling glycerine and gelatine, and were kept in iced water during six hours, and although "the skin was destroyed superficially," and intense nausea was produced by the shock, no further mischief followed than a few trifling blisters. This reminds me of an otherwise forgotten experience. My first attempt in practical chemistry, when a boy, was to make oxygen by the now obsolete method of boiling oil of vitriol over black oxide of manganese. I had about half a pound of acid in a glass retort, had just started a vigorous ebullition by holding a spirit-lamp underneath, when the retort cracked, the bottom fell out, and its contents fell on my hand, burning it fearfully, but the washing-tub, extemporised as a pneumatic trough, was there, and in my agony I plunged my hand into the water. The pain was so great immediately I took it out of the water, that I kept it there during the rest of the evening—some two or three hours—and a curious result followed. Between my fingers large blisters rose, and the skin finally peeled off, but the front and back of the same fingers were not blistered, only inflamed. This may have arisen from the difference of the action of the cold water, which, when heated by the inflamed surface of the exposed parts of the fingers, would rise, and be replaced by fresh cold water, while between the fingers it must have been more or less confined, as I probably kept the fingers nearly touching while cringing with pain. When delivering popular lectures on chemistry, which of course include the three indispensables, viz., "a flash, a bang, and a stink," I always keep close at hand a large open pan of water, for use in case of trivial accidents with phosphorus, &c. My experience indicates that the cold water is useful when instantly applied, but is of doubtful utility if some minutes have elapsed after the burning or scalding.

How to Stop Bleeding.—The following formula is recommended:—

Ry—Collodion	.....	100 parts.
Carbolic Acid	.....	50 ,,
Tannin	.....	5 ,,
Benzoic Acid (from the gum)	...	5 ,,

Mix in the above order, and perfect solution is effected. This preparation is of a brown colour, and leaves on evaporation a strongly adherent pellicle. It instantly coagulates blood, forming a consistent clot, and a wound rapidly heals under its protection.

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HIPS OR BRACES.

By Philip Foster, M.D.

Even Bassanio would have been content with the plainness of the title under which it has pleased our nineteenth century civilisation to discuss the somewhat delicate question of whether ladies' skirts should be suspended from the waist or shoulders. This is not merely a personal matter, although some writers have chosen to "pooh-pooh" it as such; for anything which concerns the health of our women is of national importance, in it being bound up the physique and stamina of posterity — the well-being, power, and supremacy of this great nation.

Were I bent upon writing an article, I might dilate upon the history of braces, criticise at length the opinions of others, or in some of the thousand and one ways in which what is known as "padding" is manufactured, and in all of which the professed *littérateur* must be an adept, swell out my sentences; but who does not in these high-pressure times, when wading through his "daily," wearily echo Hamlet's exclamation—"Words, words, words!" and call to mind John Locke's condemnation of their unnecessary use?

The whole matter, which has sufficed to fill columns upon columns of our newspapers during the "silly" season, lies in a nutshell, and may be very briefly disposed of, provided that we strike at once *in medias res.*

Before attempting to determine where this weight should be placed, we will consider the no less important question —although it seems, strangely enough, to have escaped attention—of how the weight itself, which is at present excessive, and must be mischievous, however carried, may be reduced. The warmest of all coverings is that provided for animals by Nature—wool; and, therefore, the greatest amount of heat with the least of weight is secured by wearing garments made exclusively of this material. The underclothing, then, should be woollen, not cotton, as it usually is; should invest every part of the body closely, but not tightly; and the weight diffused as generally over the body as possible by the adoption of what is known as the "combination" form. In this way the warmth, protection, and comfort of the body—ends unattained by all the clothes women now burden themselves with—might be fully provided for, without producing the least sense of oppression; and the skirts, being only required as distinctive or fashionable articles of dress, might be very light.

And now comes the question—the one really at issue—shall the skirts—and the weight of these would be trifling compared to what it at present is were they simply used for the requirements of fashion, and no longer needed for warmth—be suspended from the shoulders or waist?

I am sorry to have to confess that medical opinion is not unanimous on the subject, and that physicians whose utterances are justly looked upon with respect have supported both views. Without making any claims to superior wisdom, I may say that my mind is unbiassed by specialism —an evil that warps the judgment of so many naturally able and gifted men. The suspension of heavy weights from the waist must tend to cause, and, where it already exists, increase that weakness of the lower parts of the body from which many women suffer so acutely; while braces, as ordinarily worn, impede to some extent the action of the lungs, and so interfere with the aëration of the blood. We are left, then, on the horns of a dilemma, and are compelled, as is too frequently the case, to choose between two evils. The shoulders, being less yielding than the abdomen, are better able to resist pressure, and the respiratory muscles sufficiently powerful to prevent the imposition of a moderate weight being attended with any great disadvantages. Besides, by the adoption of a chest-expanding form of brace, compression of the chest may be greatly lessened, if not entirely obviated. I decide, then, unhesitatingly in favour of braces,* and in this opinion I am supported by the *Lancet*—no mean authority.

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

Excessive Sweating of the Hands.—We take the following useful information from the *Lancet*:—"The patient," says Dr. Alderson, "should soak her hands night and morning in warm water, in which should be dissolved about two drachms or half-an-ounce of the chloride of ammonium, and about twice as much carbonate of soda (crystals), enough water to be used to well cover the hands. I generally prescribe for my patients sufficient for six applications, and, as skins vary in tenderness, tell them to use as much as will temporarily to a slight extent cause the wrinkling known as cutis anserina (or goose skin), a condition which I describe to them as looking like the hands of a washerwoman. After well bathing, the hands are to be well rubbed with the following embrocation:—Tincture of iodine one drachm, compound camphor liniment and glycerine of each a drachm and a half, and compound liniment of belladonna one ounce. (If for the hands, a drachm of eau de Cologne makes the embrocation more agreeable.) The embrocation to be applied twice a day. A cure quickly follows. This treatment is equally appropriate and successful for excessive sweating and even bad-smelling feet, for that odour is due to the excessive function of the sudoriparous (or sweat) glands. All the cases of 'hyperidrosis' (excessive sweating) of the hands that have come under my notice," says Dr. Laing, "I have found to be due to some one of the protean forms in which dyspepsia is wont to manifest itself. The first thing to do, then, is to regulate the digestive system. In the case of a young girl, aged seventeen, who consulted me lately for this complaint, I pursued the following line of treatment with marked success:—Every day, one hour before dinner, I gave five grains of compound rhubarb pill. Immediately after the three principal meals of the day I ordered a teaspoonful of Fellows' Compound Syrup of the Hypophosphites in a wine-glassful of cold water, with once or twice a week an aloes and myrrh pill. From her dietary I excluded pastry in any form, and recommended fish, fowl, and tripe, whenever the last-mentioned article could be procured, giving directions that it should be thoroughly well stewed; also plenty of skimmed milk, but no tea or stimulants (alcoholic) of any kind. Night and morning the hands were to be sponged with belladonna liniment, and whenever she washed her hands I directed her to pour a teaspoonful of Jeyes' purifier into the water used. This local treatment I have also found most beneficial in excessive sweating of the feet, with offensive smell."

[* In the "Argosy Braces" will be found all the conditions necessary for health of which Dr. Foster speaks.—Ed.]

The Body and its Structure

"The proper study of mankind is man."—*Pope.*
"What a piece of work is a man!"—*Shakespere.*

NO. XXI.—HOW MUSCLES WORK.

By A. J. Manson.

Having investigated the structure of muscles, and having distinguished the two great divisions into which muscles fall—namely, the *striped* and *unstriped* groups, or *voluntary* and *involuntary* muscles, we may now proceed to determine how these organs discharge their duties, and play their part in the work of life. To understand this subject is an easy matter, if we commence our investigations by noting, with physiologists, that a muscle has three prominent states or conditions—namely, those of *rest*, *activity*, or *action*, and *rigor*, or *stiffening*. When at *rest*, a muscle is found to present the condition known as that of *elasticity*. It can be stretched, but, like a piece of india-rubber, it returns to its former dimensions when the process of stretching is relaxed, or ended. Naturally, a muscle exists somewhat in a stretched condition. If they remained in a relaxed state, when called into use the first part of their contraction would be lost; but as they exist in a state of slight tension, they are able to act, when occasion requires, without delay. When at rest, it has been proved that a muscle, in a measure, represents the body as a whole—in respect, at least, of its nourishment. Thus, it receives pure blood, takes oxygen from it, and returns venous or impure blood to the body. Muscles, and especially the voluntary ones, possess a rich supply of blood-vessels. As an active tissue, "muscle" demands a considerable blood-supply and a continual need of nourishment.

It is the second condition, that of *activity* or *action*, which, perhaps, possesses the highest interest for us in the study of muscles. Here the nature of muscular movements is clearly defined, and the fashion in which motion is carried out becomes plainly understood when the details of muscular action are noted. Muscles act in virtue of a property called *contractility;* in other words, muscular fibres possess a power of *shortening themselves.* If we study the action of that well-known muscle of the human arm, the *biceps*, we may readily appreciate how muscles act at large. The *biceps* forms the fleshy mass felt in the middle of the front of the upper arm. If, allowing the right arm to rest, say on a table as we sit thereat, we place the palm of the left hand over the right biceps, we can feel the fleshy mass distinctly enough. But as we raise the right forearm — still keeping the left hand over the "biceps"—we feel the muscle to swell, and to grow thicker as the forearm is bent on the upper arm. The biceps by its contraction—by its growing shorter and thicker—has brought the fore-arm nearer to the shoulder. As one end of the biceps is fixed into the radius-bone of the forearm (see Health, page 153) and the other end attached to the shoulder, and as one end of the muscle moves, it must follow that when the muscle grows shorter (or "contracts") *it must draw together the parts between which it is attached.* In the case before us, it is the lower or fore-arm end of the biceps which moves. Hence we see that by its contraction, the fore-arm must necessarily be approximated to the shoulder and bent in the upper arm. All muscles act in this way. They carry out the varied actions of the body simply by pulling together the parts between which they are attached.

The manner in which the fibres of a muscle contract, has formed a topic of scientific discussion. Probably the parts of each little fibril are brought closer together in such action, and the whole muscle thus contracts through the action of its constituent parts or elements. The fibrils in such a case would, when contraction takes place, become flatter, wider, and closer. That which is lost in the length of a fibre is gained in thickness. The muscle, to the touch, certainly swells up and becomes more prominent, and of harder nature: but these results are simply due to the increased tension to which the fibres are subjected.

Further example of muscular work will be given in our next article, and will be duly illustrated. We must, however, note meanwhile that certain results of highly interesting nature appear to accompany the contraction of a muscle. When a muscle acts, *heat* is developed. When a man's biceps was made to contract forcibly, it was found that about one degree of heat was produced. If such action was long continued, an increase of about two degrees in the temperature of the muscle took place. How this heat is produced has not been exactly determined. Possibly the increase is due to the friction of the muscle-fibres, or to chemical changes in the muscle itself. Physiologists are, in any case, inclined to believe that part of the heat which is due to active exercise is thus generated in the muscles which act. A muscle at rest gives a neutral or an alkaline reaction when it is chemically tested. After contraction the muscle shows an acid reaction, owing to the development within it of a special acid (*sarcolactic acid*). Carbonic acid gas is also given off, while oxygen gas is absorbed. Electrical currents appear also to form natural accompaniments of muscular life, and when a muscle has been "tetanised" by its nerve being electrically stimulated, the natural current may appear in a diminished state, or new currents may be developed, and these latter pass in an opposite direction to the natural current of the healthy muscle.

There lastly exist certain conditions which are necessary for the healthy contraction of muscles. It is curious to note that after a number of contractions a muscle becomes exhausted. We see this result in the tired and fatigued man, whose muscles refuse to obey his will, even though the "spirit" be strong. Again, muscles contract most readily when the temperature or surrounding heat is at a certain mean, and we can cause their power of contraction to disappear when we cut off their supply of pure blood. This fact shows us how necessary it is to secure a pure and healthy blood-supply, when muscular exertion has to be undertaken. Muscles act, it should also be noted, in virtue of their own power and property of "contractility." Nerves only supply the *stimulus* which bring this property into play. When we "will" to perform any act, a nervous impulse shoots from the brain down the spinal cord and along the particular nerves which supply the muscles we desire to bring into play. But in such an action the nerve only stimulates what is latent in the muscle; and muscles for that matter, can be made to contract for a time, even when they are removed from the body of which they formed part.

"Striped" muscles respond to stimuli in a different fashion from the "unstriped" or involuntary muscles. If

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

a muscle—say of the arm or leg—is excited through its nerve, the contraction of the muscle ceases whenever the stimulus is removed. But when the unstriped muscles—such as those of the stomach—are made to contract (as when food enters that organ), the action of the muscles continues for a time after the stimulus has been withdrawn. The voluntary muscles respond to any call which is made upon them more quickly than do the involuntary ones, but an exception to this latter rule is seen in the case of the heart. Here we find an involuntary muscle (with *striped* fibres, however) whose action is quick, decided, and almost continuous. In respect of such action, the heart would seem to be a kind of link uniting the voluntary muscles with those which act independently of the will.

The use of impure water for drinking purposes has been fully recognised as a fruitful source of disease in human kind. But much carelessness has been shown as to the necessity of providing cattle with pure water. This is a point to which the loss and inconvenience arising from the prevailing cattle epidemic may perhaps direct deserved attention.

Dogs' Diet.—The result of the experiments made to determine the quantity of food a dog can consume daily were communicated at a recent meeting of the Académie des Sciences. It appears that the quantity varies considerably, according to different conditions affecting the animal. A dog can eat and digest a quantity of meat equal in weight from one-tenth to one-sixteenth of its body. After taking cold coffee, its appetite is much keener, and it can devour a quantity of meat equalling in weight one-eighth of its body. If meat be used with bread, starch, or any kind of flour, less of the food swallowed is absorbed, and the animal becomes thinner, sometimes phthisical, and dies.

A correspondent of the *New York Medical Record* writes:—"No matter how liberally other expenses are compensated, physicians must serve the public for honour. Can you mention any other profession, trade, or business where liberal pay is not expected for all services? Apprentices, clerks, lawyers, students, get paid for their services while learning the business, and criminals who claim to be unable to employ counsel, either have a lawyer furnished by the State or go without. My personal experience bears this out, living here among the miners. Let one be injured, liberal collections are often made to pay his grocer, &c., but never a cent. for the doctor; on the contrary, he is generally expected, while giving constant daily attention, perhaps for months, to contribute more than his fair proportion for other expenses. Several years ago a wealthy corporation called upon me to attend one of their men, who was terribly injured by an explosion. It required constant attention for several months, at a distance of six miles from my home. They paid the patient's board, furnished him a nurse and all other necessary expenses, but when the man finally got well, told me that they were incorporated to mine coal, not to pay doctors. All are under the universal idea that the profession is under special obligation to work for the poor gratuitously. Where else will not the same amount of skill and education command better remuneration than in the medical profession, when public services are to be performed, and where else is the same amount of gratuitous services required?"

Sanitary nspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HYGIENE IN RELATION TO EDUCATION AND YOUTH.

By Edward H. Riches, LL.D., F.R.A.S.

SECOND PAPER.

As promised in our last paper, we must now enter plainly into some details with respect to the environment of the young whilst at school. It has been generally admitted that (with but rare exceptions) the brain of a boy or girl under the age of seven is not in a sufficiently advanced condition to profit by the routine of school life. The judgment of Dr. Paldanus, who is an authority on this matter, advised parents not to give their children any instruction whatever before the age of seven; and he puts it thus: "Those who received no instruction before they were seven years old made more satisfactory progress than others who had been taught lessons from the age of four or five. Those who had received instruction too early frequently turned out dull, and the brightest hopes entertained for them suddenly vanished." Certainly for any parent to think that the education of a child will be completed earlier in proportion as a commencement is made is a fallacy. One might very soon discover the mistake of giving to the child the food suitable for the adult; and so it is with the mind as with the body, an abnormal nutrition must end in disaster. Of course, the mind of the child under seven years of age is not to be neglected; there are countless ways of giving to it nutriment of a suitable character while it is growing or developing, and the *Kindergarten* system of mental instruction may be here happily brought into force. This grand method, which teaches the young mind by association and by an agreeable form of instruction, may be carried out in the open air as in the house. It is of paramount importance with all boys and girls at school, that those organs upon which the physical and moral life depend should be exercised and developed with judgment; they should be rendered as perfect as possible.

These organs are the stomach, the heart, the vascular and nervous systems. The lungs of children are rendered healthy or otherwise, according to the presence or absence of pure air; and the practising of running freely about, and the encouragement to use the voice properly by speaking out plainly, and singing, are points which may well be noted. Wholesome food, which is easy of digestion and nourishing, is essential for the stomachs of young people. Fresh air in a moderate temperature and frequent washing are essential for a healthy skin. Of course, one should ascertain that the condition of the body is generally healthy before an attempt is made to develope the physical and moral faculties Pure air, baths, and exercise should always be regarded as initial points of great moment. It may be remembered, too, that moderate changes of temperature are beneficial, as nature is thereby assisted in asserting her own powers of dominion; and as to exercise, let it be verging on fatigue, but there let it stop. Suitable to the temperature too, let such clothing be worn; but it is highly necessary with growing boys and girls to see that this never becomes too tight in any part, as much harm may thereby ensue. Moderation in diet is of importance, and care should be taken that

this is eaten in the proper way, not hurriedly, but with care as to sufficient mastication. The age of school children is one which requires every care, for the future man or woman greatly depends, in a physical and moral sense, upon the customs and ways of living adopted in early years. To the thoughtful of elder growth, there is a deep truth involved in Wordsworth's saying, that "the child is father to the man." In the system of education adopted at many private schools throughout the country, there is without doubt too much "learning" and too little "teaching."

Any one acquainted with school-life knows well enough that the ease of a teacher is greatly in proportion to the amount a pupil is supposed to "learn," not from "teaching," but by personal reading and study. To sit for hours in one position "cramming" for those highly popular locals and other "exams," is not a means whereby the health of a pupil is improved; and if there were more "teaching" by those who love the work, it would be all the better for the pupil. What greater error can there be than for a pupil to be compelled to addle his or her brain with a mere mechanical drudgery of learning dates of history and rules of grammar? Let the teacher, who knows and loves the subject he professes to teach, develop the mind of the pupil in an attractive and healthful way, by reference to the manners and minds of certain epochs in the world's history, by practical illustration of geometric problems or scientific truths; the "learning" is sure to follow to the thus healthily developed mind, which has been gradually trained by judicious and natural exercise into the groove for later and closer study. But it is not our present purpose to write *ex cathedra* upon a system of education, but to point out the fact that, whereas one system of education may be highly detrimental to the health of a pupil, another may be made even highly conducive to general good health.

(*To be continued.*)

Dr. Jenner was a man of wit, and the following lines addressed to a lady upon the recovery of her daughter, and sent to her with a pair of ducks, afford a specimen of his facetious vein:—

"I've despatched, my dear madam, this scrap of a letter,
To say that Miss —— is very much better;
A regular doctor no longer she lacks,
And therefore I've sent her a couple of quacks."

Cocoanut as Food.—Some extraordinary stories are told of the value of cocoanut as an efficient food. The following instance is given by the *Fiji Times*:—A vessel that once left San Francisco with 400 passengers for Sydney had, in consequence of running short of stores, to put in at Samsa, where a large quantity of cocoanuts were obtained. During the remainder of the passage very heavy weather was encountered, in which the vessel became waterlogged, and only reached Sydney after a perilous journey of eighty days, during which time all the provisions ran short, and men, women, and children were fed only upon cocoanuts, being at last reduced to one per diem for each adult. Notwithstanding the diet, not a life was lost, not a single case of sickness occurred, and all the passengers landed in a healthy and well-nourished condition.

A well-known provincial surgeon was recently being shown round a provincial hospital by one of the physicians attached to the institution. "Here," said the latter, "is an extraordinary case; I should like you just to listen to the heart." "It doesn't interest me, my dear Sir," was the reply; "I don't care for anything above the diaphragm." "Indeed! and have you any downward limit?" asked the physician. "Certainly—Poupart's ligament," was the prompt rejoinder.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE UNSANITARY HOMES OF THE RICH.

By C. F. Wingate.

(From the *North American Review.*)

III.

In Boston, many fine residences, especially in the fashionable Back Bay region, lack sanitary safeguards. Thousands of houses are built upon piles in made ground. In the process of settling, which may continue for years. the drains are inevitably dislocated, and this permits sewage to saturate the foundations and subsoil. I have known seventy-eight cart-loads of earth polluted in this way to be taken from under a building. This condition of things may exist for months, and even years, without a suspicion of harm, until serious sickness breaks out. Mr. Theodore Clarke says: "In my experience, defects of this kind are far more common than leaks in iron soil-pipes, imperfect traps, or other defects attributable to the plumber." The thickest concrete flooring is no barrier to drain-air, which, after entering the cellar, readily finds its way through the recesses in walls where plumbing pipes and furnace flues are carried to the remotest point of the building. An official examination of three hundred and fifty-one houses, made in 1878, showed that fifty-five per cent. of the drains were imperfect. In Chicago, out of seventy-five houses where diphtheria occurred, only four were found in a sanitary condition. In St. Louis, Health Officer Moore stated, in 1879, that there was probably not a single house with perfect drainage, while in the vast majority every sanitary maxim is violated.

As may be inferred, if plumbing in these localities is so bad, it is still worse in small cities and towns. In such places, men of wealth aspire to build residences rivalling those of the great cities, and with all modern improvements. Neither the architects, however, nor the plumbers on whom they rely, have hitherto been equal to the task. The former are no better informed than their city brethren, while the latter are mostly tinsmiths who have had no practical training in plumbing and who make extraordinary blunders. The most carefully-drawn specification will hardly restrain an ignorant or unscrupulous mechanic from scamping his work. Hence, hundreds of examples of criminal blundering may be found in these places. In St. Paul, Minn., galvanised iron is invariably used for ventilation pipes. The rest of the plumbing is on a par with this practice. In Rochester, I am told that there is only one practical plumber among the thirty men in the business there, and when tinsmiths have contracted to plumb a fine residence, they have had to borrow a journeyman plumber to make the wiped joints, as tinsmiths can only make "bolt" joints. In another city in the centre of New York State, a fine mansion, which cost seventy-five thousand dollars, had such small chimney-flues that not one of them would draw, while the plumbing was simply wretched. A bath-room in the centre of the house had no ventilation except through a transom window which opened over the head of a bed. The occupant of that bed died of typhoid fever. Another bath-room was ventilated by a small pipe into a chimney flue, and the odours passed into the dining-room on the floor below, causing so much offence that the fireplace had to be bricked up.

Three causes have contributed to the prevalence of defective house drainage. First, plumbing practice has not developed so rapidly as other useful arts. Houses built only a few years since lack many sanitary requirements. Since 1878, a revolution has been effected in methods of work and in the character of plumbing appliances. A large manufacturer of plumbing supplies states that his sales of fine goods of this class during the past three years exceed the total sales of the previous thirteen years. The widespread agitation by the press and by technical journals has made the public appreciate the necessity of having the best plumbing in their houses. The time is not distant when people will be willing to make a reasonable outlay to meet the sanitary requirements of dwellings. Second, the number of plumbers competent to do good work is small. The great majority have had to depend upon contract work, which of necessity is cheap and inferior. Few of them have had opportunities to execute work of the best kind. They have been snubbed by architects, cramped by customers, their motives distrusted and their intelligence belittled. A plumber who is conscientious and disposed to render a fair equivalent for his pay cannot compete with unscrupulous rivals, and must be content with a limited business. The mass of the trade are grossly ignorant of scientific principles, and are influenced too strongly by mere considerations of profit. If a customer does not want good materials or the best workmanship, the ordinary plumber furnishes a poor quality of both, suiting his service to his pay. Even when the owner is wisely liberal and desires to have the best that money can supply, the plumber, from ignorance, may be incapable of meeting his wishes, and one constantly finds houses in an execrable condition when no limit has been placed upon the cost. Again, some plumbers who have gained a reputation for good work will deliberately trade upon this reputation, and by employing a few good workmen and a large number of inferior hands or boys, will strive to make the skill of the former supply the deficiencies of the latter.

It might be expected that our architects would give special heed to sanitary requirements, but thus far they have been too busy with the æsthetic side of their profession, simply because this is what their clients expect from them. Hence the plumbing and drainage of a house are usually left to the wisdom and care of the builder or plumber, with what results the public too well know. Any one who has had occasion to read the plumbing specifications drawn up by the average architect will be filled with amazement at their crude, incomplete, and unsatisfactory character. Even where, as in New York, printed blanks are provided by the health authorities, a large proportion of the plumbing specifications have to be returned for revision.

As human nature is constituted, and while men must live and carry on business under severe competition, it is only to be expected that plumbers will be governed by self-interest; but householders may avoid being victimised by employing only men of intelligence and standing. There is a strange delusion on the part of the public that a plumber who works himself and has a shop in a cellar must, of necessity, be more intelligent and cheaper than a workman employed by a reputable firm who can afford to have an attractive shop in a good locality. Hence one constantly finds the most stupid and rascally fellows admitted into the best houses, and allowed to do as they please with the drainage. Some one has said that a man cannot handle lead without moral deterioration. A more rational explanation of the deficiences of plumbers would be, that where men's pecuniary interests are opposed to their sense of what is right, they become what is called "business honest," and sacrifice others' interest to their own. The day of retribution, however, is fast coming to the men who have done inferior work in this line.

Another cause of the unsanitary condition of modern houses is the parsimony or false economy of their owners. There seems to be a special temptation to skimp and save in plumbing. Yet it constantly happens that the whole drainage arrangements of a house are spoiled by such a penny-wise policy. It is always cheapest to have good work, and the cost of tearing out and correcting defects is usually three times the outlay for making work perfect at first. As Emerson remarks: "The difference between what is good and the best is sometimes as great as between what is good and what is bad." A slight flaw in the drainage of a house may ruin the whole. As a chain is never stronger than its weakest link, so the most elaborate system of plumbing depends for its security upon the perfection of every detail.

Furthermore, householders must learn to distinguish between things which are essential and those which are merely ornamental. They must not consider a stain on a marble slab or on the lining of a bath-tub a more serious offence than a soil-pipe full of sand-holes or one jointed with cement and putty. Neither must they take it for granted that because the visible work about a house is neatly and carefully finished, the work hidden under floors or behind casings is of equal quality. When one reads descriptions of the gorgeous sanitary arrangements in certain London artists' homes, where lavatories are fitted up with coral, silver, crystal, and marble slabs, inlaid with uncut gems and ornamented with silver and gold, he cannot but wonder, in view of the shocking sanitary defects in the homes of the English nobility and of royalty itself, if the rest of the work is scientifically planned and executed.

Overpressure in Elementary Schools.—Great as are the advantages of free elementary education, it is under the compulsory system apt to suffer from certain disadvantages which a little forethought and discretion on the part of officials connected with its administration may often remedy. Complaints are heard from time to time of the tendency to unduly increase the number of subjects of instruction. Teachers complain of the pressure on their own behalf and that of the children. We do not dispute that there may be subjects outside the circle of the three R's about which young children may learn something with benefit to themselves, but the application of all such instruction should be tempered by consideration for the age, the circumstances, not always favourable, in regard to nutrition and the hygienic surroundings of the recipients. The brain of a child of ten or twelve, for example, even under the best conditions, is not usually equal to much in the way of elementary mathematics, of languages other than the every-day tongue, or even of that favourite school study, physiology. In regard to all such subjects there should be no pressure. We do not know that ill effects in this connection are to be measured by the statistics of brain disease. A child's health may suffer for want of timely play and fresh air without any signs of mental alienation. There is many a strumous child in Board Schools. Can any one say whether tuberculosis or meningitis has increased under educational pressure?—*Lancet.*

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

Tea-Drinking.—The Dean of Bangor lately took occasion to inveigh against what he terms the pernicious habit of tea-drinking. From a perusal of his remarks, one would think that indulgence in "the cup that cheers but does not inebriate" lies at the foundation of many of the evils and vices that tend to enervate and degrade mankind. To our mind the conclusions of the learned Dean are drawn from insufficient premises, which, in their turn, can scarcely be regarded as scientific truths. To say that over-much tea-drinking acts as a dangerous revolutionary force amongst us is scarcely on all fours with the acknowledged high physical and mental standard of men of our own times. If we were to follow his argument to its logical end, we should not be surprised to find that the use—or abuse—of the popular beverage through so many years had, by its debasing and destructive tendencies, in virtue of the process of natural selection, caused the tea-drinkers to go to the wall or set each man against his fellow, and brought Macaulay's New Zealander to contemplate the ruins of St. Paul's, or Campbell's last man to bewail the infatuation of his sacrificed ancestors. To fix the ills and misfortunes of race and individuals upon one or other besetting fault, such as excessive tea-drinking, is as reasonable as to ascribe the brain disease of a madman to his insane acts. We would not for a moment be held to countenance the abuse of what in moderation is undoubtedly a tranquilliser of the temper and a pleasant and harmless stimulant. Times enough we have directed attention to the injurious practice of taking strong tea to excess, and especially upon an empty stomach, and to the harmfulness of ingredients such as artificial colouring matter employed for sordid gain. But there is a medium in all things, even in those where the worst is not very bad or the best very good. Hard-worked minds and fatigued bodies are often the better for some gentle stimulant that rouses into gentle activity the nerves which minister to animal life and comfort. Tea has it uses and abuses, like most other things; but we are inclined to think that the latter are an insignificant set-off to the former. Oatmeal and milk are excellent things, but they are scarcely fitted for the drawing-rooms of society; and society must have its pleasures as well as carry out its duties.—*Lancet.*

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Pure Water for Cattle.—Under the above heading Mr. G. Bowles has been writing to the *Times*, asking the aid of that journal to impress upon the Government that it ought to insist that holders of land should in every case provide pure water for cattle to drink. If the Government inspectors, Mr. Bowles adds, would only look at the ponds at present provided for drinking purposes, they would see how very foul the water often is, and that it contains numbers of animalculæ. The complaint that farmers are not careful to supply their stock with wholesome drinking-water is doubtless just and much needed, and it is by no means unreasonable to ask that Government should take the matter up, and instruct their inspectors accordingly. However, Mr. Bowles, who is an authority on the subject, brings a specific charge against foul water, furnishing very strong grounds for interference. He says if milk be taken from cows that have drunk this water and kept two or three days, the same animalculæ will be found in it; and that he learns from a friend, who thoroughly understands the question, that if milk be set to make cheese at a temperature, say, of 70 deg., the curd will develop life of the same species that was in the water. Mr. Bowles concludes by hinting at a connection between sewage-water drunk by cattle and frequent outbreaks of typhoid fever, and asserts that "foot-and-mouth disease arises from the drinking of these impure waters." Certainly the allegation is comprehensive, and full of interest to all. We can only draw solace from the reflection that Mr. Bowles, who is not a biologist or pathologist, may have been mistaken, and that the animalculæ found in the kept milk were not the same as (or the descendants of) those in the contaminated water. We trust the publication of Mr. Bowles' observations may induce some competent scientific man to investigate this most important topic.

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A Seventh Sense.—Sir William Thomson, the eminent Professor of Natural Philosophy in the University of Glasgow, in his inaugural address, delivered last week, as President of the Midland Institute, at Birmingham, broached the idea of the existence of a magnetic sense. This sense he called the seventh sense, to distinguish it from our other six senses—namely, those of sight, hearing, taste, smell, heat, and force. He said that, in speaking of a possible magnetic sense, he in no way supported that wretched grovelling superstition of animal magnetism, spiritualism, mesmerism, or clairvoyance, of which they had heard so much. There was no seventh sense of a mystic kind. Clairvoyance, and so on, was the result of bad observation chiefly, somewhat mixed up with the effects of wilful imposture, acting on an innocent and trusting mind. If there were not a distinct magnetic sense, it was a very great wonder that there was not. The study of magnetism was a very recondite subject. One very wonderful discovery that was made in electric magnetism was made by Faraday, and worked out very admirably by Foucauld, an excellent French experimenter, showing that a piece of copper, or a piece of silver, let fall between the poles of a magnet, would fall down slowly, as if through mud. Was it conceivable that, if a piece of copper could scarcely move through the air between the poles of an electric magnet, a human being or living creature, in the same position, would experience no effect? Lord Lindsay got an enormous magnet, so large that the head of any person wishing to try the experiment could get well between the poles; and the result of the experiment was marvellous, the marvel being that nothing was perceived. Sir William Thomson, however, was not willing to admit that the investigation was completed. He could not but think that the quality of matter in the air, which produced such a prodigious effect on a piece of metal, could be absolutely without any perceptible effect whatever on a living body. He thought the experiment was worth repeating; and it was worth examining whether or not an exceedingly powerful magnetic force was without perceptible effect on a living vegetable or animal body. His own speculations had led him to conclude that there might be a seventh or magnetic sense; and that it was possible an exceedingly powerful magnetic effect might be produced on living bodies that could not be explained by heat, force, or any other sensation.—*British Medical Journal.*

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Menthol and its Use.—Menthol, or menthylic alcohol, is a crystalline substance, deposited from the oil of peppermint, prepared in China and Japan from *Mentha arvensis*

var. *piperascens*, and *glabrata*. It formed the chief ingredient of a much valued remedy for neuralgia before its nature or source was generally known. Under the name of Po-ho-yo, or Gouttes Japonaises, it has been sold in small bottles, labelled with Chinese characters. It is a white crystalline stearoptene, melting when pure at 97° F., and is obtained by the Japanese from the oil of peppermint by submitting it to freezing several times in succession, until no more menthol crystallises out. It is also said to be contained in the American and English oils of peppermint, but probably in small quantities only. It is somewhat surprising that the Japanese peppermint plant, which is grown in England as a curiosity, has not been cultivated in this country as a source of this drug, the supply of method being uncertain, the demand great, and the price in consequence occasionally very high. Menthol is said to be sometimes adulterated with crystals of Epsom salts, to which it bears a great resemblance. These, being insoluble in alcohol or chloroform, in which fluid menthol is freely soluble, can be easily detected. Samples of fine crystals sometimes contain some essential oil adhering to them, a fact which must be taken into consideration when the menthol is made into cones or pencils. Menthol is but slightly soluble in water, although imparting a strong smell and taste to that liquid, and is insoluble in aqueous alkalies. It is soluble in fixed and volatile oils, and in ether. *Therapeutical uses.*—Menthol acts as a diffusible stimulant when given internally. Its solutions, whether in oil of peppermint, rectified spirit, or other solvents, when applied externally, act as an anodyne, and relieve pain somewhat after the manner of aconite, over which menthol has the advantage of not being poisonous. It is a powerful antiseptic, while not at all caustic. It is used by the Chinese in sunstroke, the oil of peppermint containing menthol being rubbed over the head. According to Mr. T. Christy, under these circumstances it produces profuse perspiration, and relieves pain, and procures sound and refreshing sleep. In neuralgic pains of any kind, whether facial or intercostal, or in sciatica, great relief is experienced by the external application of menthol. In ringworm of the scalp it has been used with success. Its antiseptic properties, combined with its action as a powerful diffusible stimulant, seem to indicate that it might be of great service in the treatment of cholera, but it does not appear to have been tried as yet in this disease. It is also used in various forms for stopping toothache, the solution being placed on cotton wool in hollow teeth; also for preparing them for stopping, or to prevent pain from pressure of the forceps during extraction, a strong solution being applied to the exposed dentine. *Preparations and doses.*—An alcoholic solution of one part in ten of rectified spirit may be used externally in sciatica. For ringworm a mixture of one part of menthol in four volumes of chloroform and twelve volumes of olive oil. It is, however, commonly used in the form of cones for rubbing over painful surfaces, the crystals being made to cohere more firmly by the addition of a small proportion of solid fat. Several liquids for inserting into decayed teeth are used, which are made as follows:—Equal parts of menthol and thymol, menthol and phenol, or menthol and chloral hydrate. Three parts of menthol and two of camphor, two parts of menthol and one of croton-chloral hydrate, two parts of menthol with one each of carbolic acid and croton-chloral hydrate, all form similar liquids when triturated together.—*Midland Medical Miscellany.*

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

FOODS AND DRINKS.

Familiar Lectures on the Physiology of Food and Drink. By Robert J. Mann, M.D., F.R.C.S. (London: Ward, Lock, & Co.)

Dr. Mann tells us in his preface that the lectures which have been published in this handy volume form were delivered to various audiences, consisting chiefly of teachers, to whom the information thus imparted must have been as interesting as it was instructive. In the whole range of physiology, there is no topic which exceeds in importance that dealing with food and drink. If we consider how little is known by ordinary persons concerning the nature of the foods required to maintain the body in health, and how infinitesimally small is the knowledge ordinarily possessed of the quantities necessary for the support of the frame under the varying exigences of life, the wonder is not that disease attacks us, but that we are so comparatively free from its inroads. Such a work as that before us, then, does much good by the ventilation of topics bearing intimately upon health and social comfort. We have always held the opinion that when education in the science of the body advances to a point which seems within easy distance of the culture of our day, the cause of temperance and of reasonable living will not require any external or adventitious aid to made it acceptable to any thinking person.

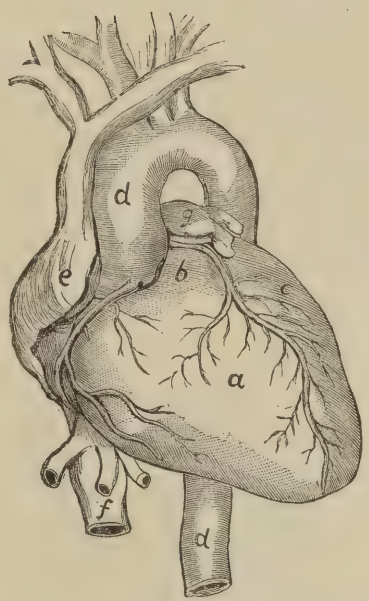


Fig. 1.—View of the Heart and Great Vessels.

Dr. Mann has divided the substance of his book into some fourteen lectures, each of which is written in a plain and attractive style. He begins—wisely, we think—by showing the immense and absolute importance of water in the maintenance of the body. The first lecture is devoted to the description of the nutrition of plants, and to showing how water finds its way into the plant organism. The curious *stomata* of the leaf are well described, as also are the functions of leaves in transpiration—that is, the emission of watery vapour; but Dr. Mann is behind the age somewhat, in speaking of the ends of the roots as

spongioles. As a matter of fact, water is taken up by the delicate *root-hairs* of plants, and not by the tips of the rootlets. The amount of water given off from plants under the influence of the sunlight is very large. A large sunflower gives off a pint and a-half of water in twenty-four hours, while in the same time an acre of grass emits 6,400 quarts. In chapter second, Dr. Mann shows how plants are the food-makers; how from carbonic acid gas, water, and ammonia, the green living plant builds up its frame and forms the starches and other matters which are utilised by animals for food.

These preliminary discourses lead to the consideration of "food-substances and digestion." A clear account is given of the manner in which digestion is carried out, from the

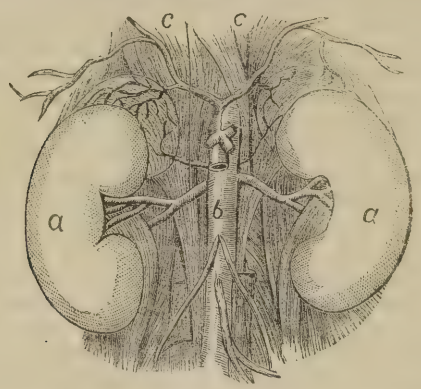


Fig. 2.—The Kidneys in their Natural Position.

processes in the mouth, onwards to the "absorption" by the *villi* of the digested products, and to their incorporation in the blood circulation itself.

The "composition of the blood" affords Dr. Mann an opportunity for a series of interesting remarks on the heart and its work. The heart (Fig. 1) is shown in the accompanying illustration. We see its two sides divided each into an *auricle*, or smaller chamber (*e*), and a *ventricle* (*a*), or larger chamber—those figured being the chambers of the right side; while *c* is the *left ventricle*, and *g* the *left auricle*. From the left side of the heart the pure blood is pumped out through the body by means of the main pipe or artery—the *aorta* (*d d*) which curves in the chest after leaving the heart to form its "arch," and finally runs down

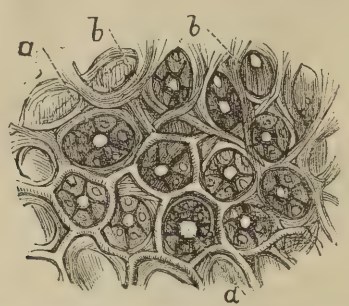


Fig. 3.—Microscopic Structure of the Kidney.

by the spine as the main blood-channel of the body. Readers who wish for a clear description of the circulation will find such in Dr. Mann's pages, and we are especially pleased with his remarks on the nature of the blood itself. The cut of the red corpuscles (page 75), however, hardly does justice to the latter bodies.

Passing over the lectures on the liver and other secreting organs (such as the pancreas, or "sweet-bread," the salivary glands, &c.) on the structure of the lungs, and on the functions of muscle, brain, and nerve, we arrive at the important topic of the kidneys, skin, and their work. The kidneys, Dr. Mann shows, lie in the lumbar region, or that of the loins, each (Fig. 2 *a a*) receiving pure blood from the aorta (*b*) through the *renal artery*, or kidney branch, which may be seen in the illustration entering the organ. A microscopic section of the outer part of the kidney (Fig. 3) shows us the parts (*b b*) which separate out the waste products from the blood, and the ducts or tubes (*a a*) which carry these products to the outlet of the organ. In a longitudinal section of the kidney (Fig. 4), we see the outer part (*a a*) with the *papillæ* or projections (*b b*) opening into the *pelvis* or funnel (*e*) of the organ. The large artery which enters the kidney is shown at *g*, and the vein which leaves the organ at *h*. Into the kidney there pours a continuous stream of arterial blood, as Dr. Mann shows, and out of the kidney streams a continuous current of blood which has had its impurities removed in its passage through the organ. For the kidney is a kind of tubular filter,

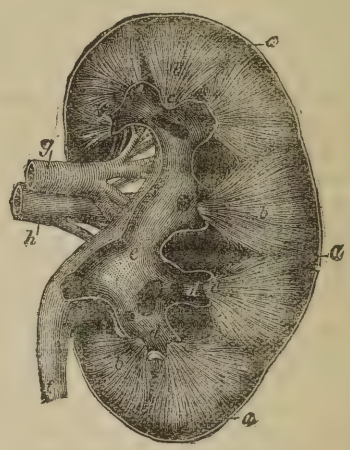


Fig. 4.—Section of a Kidney.

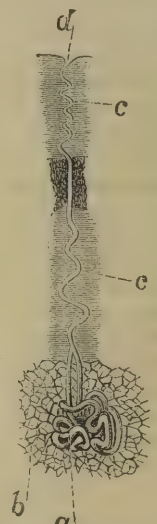


Fig. 5.—Structure of the Skin.

which purifies the blood from certain waste products, amongst which water and *urea* stand conspicuous.

In clearest relation to the kidneys stands the skin as an organ of excretion—that is, an organ whose duty, in part at least, is that of getting rid of the waste matters which every act of life entails. A section through the thickness of the skin (Fig. 5) shows us the outer or "scarf skin" (*c*), with the sweat-tube opening in a *pore* (*d*), while below the true skin is seen the sweat-gland (*a*), which is merely a coiled-up tube. If the sweat-tubes of the body were uncoiled, they would make up, as Dr. Mann tells us, a length of twenty-eight miles. Hour by hour the skin acts in its work of excreting waste, so that about two pounds' weight of liquid are poured out in twenty-four hours from the skin of the adult under ordinary circumstances. It is needless to add that this quantity becomes immensely increased during and after great exertion.

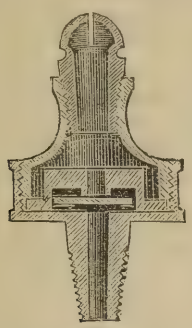
The remaining parts of Dr. Mann's instructive volume are devoted to the discussion of such topics as "nutrition, work, and heat;" while the chapters devoted to the nature of fermented drink, alcohol, intemperance, tea, coffee, and cocoa are full of matter which it concerns every reasonable and thinking person to know. Dr. Mann's position is highly scientific when discussing the action of alcohol, and it is a safe position, because it is founded on scientific data. We are glad to see that our author accords a high value to

cocoa as a food, and places tea and coffee in a subordinate position as articles of diet.

By all who care to know something of the nutrition of their frames, how that work is carried on, and how it may be safely pursued, Dr. Mann's lectures will be found highly useful and instructive. We have seldom met with so much information of sound and genuine kind, compressed into so small a space; and we say this, while at the same time declaring that wherever necessary, the explanations given in this volume are of full and exhaustive nature. As a text-book for schools, this work should rise into high favour with teachers.

Sanitary Appliances, Etc.

Snelgrove's Patent Automatic Governor Gas-Burners.—We have pleasure in calling attention to these burners, one of which we have had submitted to a series of tests with the view of deciding its claims for notice. The desirability of employing such an apparatus is seen when it is found that "the pressure of the gas in the supply-pipes ranges, according to the locality and other circumstances, from about 10-10ths to 35-10ths, and is, moreover, continually varying. Now, the maximum pressure required at the point of ignition of the burner is only from 3-10ths to 5-10ths, and every 1-10th of pressure beyond this passes more and more gas through the burner than it can properly consume; the consumption, or rather waste, of gas increases rapidly with the pressure, while the lighting power of the burner per foot of gas greatly decreases. It is thus obvious that unless the burner is 'governed,' the heavy and varying pressure will (as explained above) force through it a much greater quantity of gas than it is constructed to burn; the result being a bluish and very poorly illuminating flame, a vitiated atmosphere caused by the escape of the only partially-consumed gas, and last, but by no means least, a heavy, and to the consumer very unsatisfactory, gas bill."



By the use of the Snelgrove burner we have found the gas pressure to be efficiently controlled, and the flow duly regulated, while the maximum of light is also obtained. We can readily endorse the opinion that the use of these burners will certainly tend to a reduction in our gas bills, while air contamination is avoided. As shown in the appended illustration, Snelgrove's "Patent Governor Gas-Burner" consists of a non-corrosive tip made of steatite, and of the burner proper, which is acted upon by and in turn controls the gas-supply. These burners are made in various sizes, known as 3, 4, 5, and 6; the sizes corresponding to the number of feet of gas consumed per hour. The prices of the burners are extremely moderate, and vary from 15s. per dozen, or 1s. 3d. each, for brass brass burners, to 1s. 6d. each for nickel-plated ones. They are to be had in any quantity of Messrs. Snelgrove & Co., 39, Hindon-street, Victoria Station, London, S.W.

The meanest practical joker lives in Philadelphia. Being on a visit to a neighbouring city, he spotted his face all over with red paint, and suddenly made his appearance at an annual meeting of the Anti-Vaccination Society. The members nearly broke their necks getting out of the windows.—*Med. News*, April 13.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

DANGER IN THE DAIRY.

Sir,—Now that attention is being so much directed to the spread of scarlet fever through the milk supply, perhaps the following may not be uninteresting as an illustration of the perils to which the public are exposed.

A lady with two children recently visited a farm, and on her arrival the dairy-maid was told off to wait upon them. She noticed at the time that the girl's face looked peculiar, and the skin peeling, but not having any experience of fevers, accepted the girl's statement that she was merely suffering from the effects of a chill; and although the girl drew her attention to the state of her hands, which were also peeling, no importance was attached to it until in a day or two both these children were attacked with scarlet fever, and then it dawned upon them that the dairymaid must have been suffering from the same disease (although, of course, in a mild form, as she had not been prevented from attending to her duties the whole time); and when a medical man was called in, this proved to be correct.

Now this girl, whilst her skin was in the peeling stage, had been attending to the work of the dairy generally, *had made the butter, and had actually made the bread* for the household, and one can scarcely imagine the extent of the mischief which she might have caused.

Might not many of the outbreaks of fever arise from similar causes, and from which there is no safeguard, seeing that the disease does not come under the notice of any medical man, and, consequently, no steps are taken to isolate it?—I am, sir, yours, &c., Sanitas.

Oct. 13, 1883.

[A recent case at Dundee, where a dairyman's son affected with scarlet-fever, and nursed in the dairy, caused seventeen cases of that disease amongst the customers (four being fatal cases), illustrates, as does the letter of "Sanitas," the fearful results which ignorance and carelessness combined entail upon the public in the matter of health. How much longer are dairies to be left without efficient inspection?—Ed. "H."]

NECESSARY IMPROVEMENTS IN FISHING DISTRICTS.

Sir,—It appears to me that our sanitarians are somewhat slow in their movements on urgent occasions, and that a great deal of their time is centred on City improvements, on ventilation and sewers, whereas it would not be by any means a futile work if they passed a little coastwards and examined the condition of sanitation on, say, the Fifeshire coast—Anstruther, Pittenweem, and St. Monan's. The latter town requires special attention. Its sewers are very imperfect; water is thrown out on the road, and left to run into the harbour heavily charged with animal matter, ashes, and other filthy items. These are promiscuously strewn about, and left for days together, until, once per week, it is thought necessary to remove them. The authorities in all such districts should immediately organise "dust-carts" and a sanitary service to visit the villages daily, and an important step would thus be taken for the physical well-being of the fishing villages of the Fifeshire and other coasts.—I am, yours, &c., G. Hutchison.

Edinburgh, Oct. 22, 1883.

QUERIES AND ANSWERS.

[We would direct the attention of our correspondents to the fact that, owing to the necessity for sending HEALTH to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of HEALTH, to address their inquiries to the Publisher, *and not to the Editor.*]

GENERAL.

KING, G.—The remark is perfectly correct.

ANNIE SOUTH.—No; there are seven bones in the ankle. See our papers on "The Body and its Structure."

A. Z.—Communicate with Mr. Browning direct.

CECIL ARTHUR.—The blood-corpuscles are of two kinds, white and red. The latter are believed to be derived from the white.

G. ANDERSON.—Dr. Wilson does not lecture this session in your town.

ANTICIPATION.—Price varies. Write to Messrs. Beeman & Roberts direct.

OLGA.—We have never heard of the practice. It would not, in our opinion, be a safe one.

S. O. N.—By breathing into lime-water, you form carbonate of lime (*i.e.*, chalk). The carbonic acid from your lungs unites with the lime and forms the carbonate.

ALEXIS.—Not just yet. Have patience.

LOUIS A. MUMFORD.—You allude to the recent contest in which a temperance lecturer tried a reaping contest with a farmer. You say the teetotaller was not a farmer, and was not accustomed to manual labour. Why, then, in the name of common sense did he attempt such a trial? If the advocates of total abstinence make such exhibitions of themselves, little wonder, say we, that they incur the derision of those who are ill-disposed to their movements. You entirely mistake the spirit of the paragraph in HEALTH, when you say it was meant to prove "the superiority of alcohol"—whatever you may imply by that term. If you will re-peruse the article you will find the writer is simply stating the scientific position of tea and alcohol, under various circumstances of life. That this implies no discouragement of total abstinence must be clear to any impartial mind which peruses the statement. But if abstainers will be so foolish as to imagine that because they take no alcohol they are able to vanquish every one who does, they must take the consequences of defeat.

S. W. SPINK.—See above reply. Nobody doubts that alcohol is not essential for health, and nobody has certainly found anything in our columns which asserts the contrary. If you will read the review of "Study and Stimulants" (HEALTH, No. 21) you will find therein our views on the whole question of alcohol. As for your Bible quotations, you should know by this time that both abstainers and non-abstainers can find abundance of textual support for their practices. The question is not one to be settled by texts. It is one for the wise, scientific decision and individual experience of each thinking person.

A. C. PEDLEY.—On the contrary, we think the exhibition to which you allude is a proof of what we urge, namely, that individual experiences go for nothing. We do not say an abstainer may not work better than a non-abstainer; but when the former thinks his abstinence is to outweigh everything else, it is time to protest. See also replies above.

J. JOHNSTON.—Thanks for your letter. We believe thoroughly in the system; it is an excellent and reliable one, and our opinion has been formed from personal experience of it. We intend to discuss "memory" on some future occasion.

R. THOMPSON.—Many thanks for the cutting, of which we shall make use.

W. GRIFFITHS.—Thanks for your letter. Your views are well expressed, and we agree in the main with them.

SANITARY.

ANXIOUS.—The condition of matters you note is simply deplorable. Your case is one of blood-poisoning from a mass of filth. Communicate at once with the Medical Officer of Health.

ABEL KIRKWOOD.—No; the invention has no sanitary interest; at present, at least.

OUTGOING.— You are not responsible. The landlord is the proper party.

CINGLETON.—See our description of Banner's system, in HEALTH, No. 28.

SOLDIER.—Mr. Maignen, of the "Filtre Rapide," Tower-street, London, will be glad to show you suitable filters.

MEDICAL.

T. J. F.—We do not think much of the circular, because there is not the name of a single medical man or of any responsible person attached to it. We should not advise you to place yourself under the care of any such institution without a guarantee of the qualifications of the proprietors.

J. P. A.—The child probably suffers from a form of bronchitis. We should recommend warm baths and the administration of a little ipecacuanha wine when he has difficulty in bringing up phlegm. In the other case, take the child to an eye hospital and have the eyes treated at once.

T. W. H.—Take a teaspoonful of Fellows' "Syrup of the Hypophosphites" in a wineglassful of water thrice daily before meals.

Z. Y.—See advice to "Fylde," fully given in HEALTH, No. 24.

W. W. B.—Look to the state of the bowels. Such results, as often as not, arise from some irritation (such as worms) which is transferred, and causes the disagreeable symptoms to which you allude. Try also the following:—Bitartrate of potass, 3 drachms; infusion of buchu, 6 ounces. A tablespoonful thrice daily. Attend to the general health.

G. H.—Difficult to say anything about your case from your description. Have you ever suffered from any serious ailment? The symptoms you allude to may arise from indigestion. Rest after meals, and write more fully.

EIN NARR.—Try to reduce your tobacco gradually. There should be no difficulty with a strong will to do this. The pamphlet enclosed is a piece of American quackery.

T. L. L.—No; don't be persuaded into buying any such belt. It is electrically a sham, as Mr. Carpenter's articles have shown. Take the tonic recommended to "T. W. H." above. You suffer from no disease. Cold sponging might aid you also. The "Dr." you name is a quack. We know his pamphlets well. They contain the usual amount of rubbish.

KEZIA.—1. Try the Hospital for Throat and Ear Diseases in Gray's-inn-road. By giving a donation to the institution you will recompense it most suitably for the advice you receive. 2. We are great believers in the advantages of cod oil emulsion to which hypophosphites have been added. Any good chemist will keep such a medicine. Give plenty of eggs, milk, light puddings, mutton (for preference), and cocoa instead of tea. Rapid growth will account for the thinness.

INTERROGATOR.—Certainly not. As you describe the symptoms they are indicative of robust health. The person you consulted must have eyes equal to those described by Sam Weller in the witness-box, if he could diagnose your symptoms in the way you mention. He is an unregistered practitioner—or, in plain language, a quack, who makes "herbal medicines" a specialty. Try the tonic recommended to "T. W. H." above.

SANGUINE.—Yes; perfectly safe to use for the face. There are various toilet preparations made of Vaseline which might suit you. Try the Vaseline pure; and if not improved, write again.

A. WRETCH.—You are morbidly excited and alarmed. Yours is a very common case, but one in which a little attention to your health and habits will effect a complete cure. Sleep on a hard mattress; don't take late suppers, or drink fluids late at night; use cold sponging; take ordinary nourishing, but light foods; give up tea and all stimulants; and, finally, take for a time the tonic recommended to "T. W. H." in present number of HEALTH. Steer clear of quacks, who flourish on cases such as yours. You need have no alarm or fear of your future.

J. R. D.—You do not mention your age; but if, as we suspect, you are up in years, the affection you name is by no means uncommon. We should recommend you to see a consulting physician (such as the Professor of Medicine in your University), and undergo a thorough examination. Cases like yours are often put right by very simple treatment; but you must see a good physician.

ERNE.—Read our papers on the "Hair" in the first three monthly parts of HEALTH. If you do not find what is required therein, write again.

IMPECUNIOUS.—1. Try a lotion of bicarbonate of soda, one drachm; added to one and a-half ounces of glycerine, for the skin irritation; and let us hear the result. 2. No; no danger if natural. Is there any cause? Wear a suspensory bandage. 3. For the elbow pain try bathing with hot salt water.

NON OMNIS MORIAR.—See advice to "A Wretch" above. Be cheerful, and know you suffer from no disease.

S. O.—1. You might try Pulvermacher's chain belts, which are highly effective (194, Regent-street, London, W.). 2. The use of a mineral water (*e.g.*, "Æsculap," "Victoria Ofner Bitter Water,"

or "Friedrichshall") is preferable, we think. Cold water will do no harm. A fruit dietary should also be tried.

L. W. Pride.—There is no special course of dietary for you but the ordinary light, nutritious feeding recommended to all. Be careful as to smoking, as tobacco acts as a depressor of the heart's action; but an occasional light cigar will do no harm. Perhaps tea and coffee might be discontinued for a time for cocoa. Tea is often responsible for indigestion and like troubles. Why not consult a good physician if your heart-trouble alarms you? You are possibly fearful over what does not exist.

A Martyr to Chilblains.—Try the effect of a lotion composed of equal parts of tincture of cantharides and soap liniment (mark "For External Use—Poison"). Apply this with a little cotton wool to the chilblains, and let it dry on. We intend shortly to give a number of *recipes* for this distressing affection.

W. W.—Glad to be of service to you. Try Morson's "Pepsine" with your food, as directed on the bottle; give up reading at meals; and rest after food. A little "Æsculap" water in the morning may do good. Avoid tea, coffee, and vegetables (except potatoes), and let your diet be very light for a time—milk, eggs, puddings, &c., and give your stomach a little rest by trying Brand's "Beef Essence," or like preparations, instead of the solid meat.

Henry Hemans.—Either place should suit you. The Isle of Wight is more sheltered; but if desirous of avoiding the journey, try Eastbourne or Hastings.

Curious.—Breaking down old adhesion is always a dangerous matter. Bone-setters do this without scruple, and sometimes, no doubt, successfully. But each case is to be judged on its own merits. Personally, we should never allow such a proceeding to be perpetrated on ourselves, except under the best surgical advice.

Ernest.—Try the effect of a little carbolated Vaseline ointment (about 3 per cent. of the acid, to be added by the chemist, to pure Vaseline) to the rash, and let us know in a week the result. If not better, we can recommend something else.

Nemo.—See advice to "A. Wretch" in present number of Health.

Jabez.—1. Try the effect of washing the head with a little bicarbonate of soda dissolved in lukewarm water. Attend carefully to cleanliness, use a moderately hard brush, and rub in night and morning a little Macassar Oil. Your general health is probably the cause of your hair-troubles. 2. Try cod-oil emulsion instead of the pure oil itself. Such fatty articles as mutton chops, &c., also starches and sugars, should be taken as part of your dietary.

K. P.—1. The question is a very wide one, and cannot be answered here. We may refer you to our review of "Study and Stimulants" (Health, No. 21, p. 333), for a discussion on this topic. A series of articles on alcohol by eminent medical men is published by Isbister & Co., Ludgate-hill. They were reprinted from the *Contemporary Review*. You should read this book. 2. Your second chief question is really as wide as your first. We should say see that your food is plain and nourishing, habits regular, and exercise free. 3. There are no reliable means for "forcing" hair on the face beyond attention to the general health. Many persons constitutionally have little hair on the face.

Marta.—Try small quantities of food given frequently, instead of ordinary full meals, and also give the stomach rest for a time by administering the food in a concentrated state. Brand's "Beef Jelly" and similar preparations should be used. Morson's "Pepsine," given along with food, should also do good. 2. Use Pears' Soap, with hot soft water for washing.

W. Richards.—See advice to "Marta" above in respect of the food being taken for a time in concentrated form. Avoid vegetables, and try the "Pepsine" with food as above directed. 2. Try "Æsculap" mineral water as a mild aperient. 3. See advice to "Fylde," Health, No. 24, where appropriate treatment is recommended.

Brighton.—We give the name of the place from which you date your letter, as it is unsigned. If you will send us name and address we will give you the name of a medical consultant in London, who will give your case every attention.

Troubadour.—1. No objection to the dinners. They will be a pleasant change. 2. No; do not use hot salt water for the hair. Use hot rain water and Pears' Soap once or twice a week, and rub in a little of Rowlands' Macassar Oil to the roots night and morning. 3. Mere washes will not clean the teeth. We prefer precipitated or camphorated chalk. 4. There is no need, so far as we see, to put Condy's Fluid in your washing water.

H. A.—1. We do not know of any such soap. Write to Mr. Carpenter at our office and repeat your inquiry. Have you tried "Pears'"? 2. We prefer camphorated chalk as a dentifrice. Used with a moderately hard brush, it has an excellent effect on teeth and gums.

B. R. C. E.—1. You mistake the nature of the secretion you name. 2. No: what you name is perfectly consistent with good health, provided the occurrence is not too frequent. Only quacks will persuade you differently.

Phosphorus.—The symptoms you name might all be explained in a different fashion; hence, where there may be a doubt, we advise a consultation with a good physician. The phosphates are believed to represent brain and nerve waste; but except when in excess, need cause no trouble. It is difficult to say anything about the calculus. From your description we imagine the gland you name may be enlarged, and this would account for what you observe. Why not undergo a thorough examination, and have your doubts set at rest?

R. F.—We think yours is eminently a case in which a total change of diet would effect a cure. Give the vegetarian system a trial. In your city, the head-quarters of the system are to be found. We should say you would decidedly benefit from a diet in which fruits and vegetables form the chief items.

Llewellyn.—From your description it is clear you suffer from digestive troubles. You may dismiss all idea of "cancer"—there is no sign of such an affection. We advise greater care in the choice of food. Alter your meal-hours for a time, and try the effect of Morson's "Pepsine," taken along with the food as directed on the bottle. The advice given to "R. F." above might also be followed by way of experiment.

Blackburn.—Try to do without tea and coffee for a time, and take the tonic recommended to "J. F. J." in No. 27 of Health. Glad to advise further, if necessary.

E. Hayward.—Read our remarks on "Colds" in the "Notes by the Way," Health, No. 27. If you do not find there what you require, write again, stating your wants specifically.

H. J. W.—Sleep on a hard mattress; use cold sponging; take plain, nourishing food; no stimulants; and the tonic recommended to "T. W. H." in present No. of Health. With care, you will effect a cure. Steer clear of quacks.

Wakeeul.—Give up smoking—or at least moderate the habit. Many cases of your description owe their origin to such a practice. Take fifteen grains bromide of potass in a wineglassful of water on going to bed for a few nights until your sleepless habit has been overcome. But beware of getting into the habit of taking any narcotic.

Lux.—The too frequent washing of the head is a bad practice. There is no need, under ordinary circumstances, to wash the head every day. We do not know the "Boron" you speak of; but borax as ordinarily sold has a tendency to lighten the hair and to render it brittle. We should not recommend the continual use of borax in washing water.

J. C. (Glasgow).—Have nothing to do with the "Restorer" you name. Its "proprietor" is a well-known quack, and the apparatus is a fraud and a sham. Your case is a common one, but eminently curable. See advice above to "H. J. W." See to your general health, and you will soon be cured. Only quacks could persuade you that you need be apprehensive about yourself.

S. M.—There is no specific medicine for your complaint. You should see a good surgeon, as a simple operation will be likely to cure you.

Distressed.—A patient such as you describe should, in our opinion, see a physician at once. You need have no hesitation or delicacy in the matter. Medical men are highly sympathetic, and such cases are continually occurring in practice. There is, in our view, the greater need for consulting a doctor, inasmuch as, from what you mention, the condition of the patient demands care and attention.

Co-operation.—You exhibit the too common symptoms of indigestion, and you will require to effect a change in your diet. Give up tea and coffee, and try cocoa instead. Take milk, eggs, puddings, &c. No stimulants. A little Morson's "Pepsine" should be taken with the food. Look to your teeth, and try cold sponging in the morning, if you have sufficient reaction. Moderate exercise is necessary, but your work should not be too heavy.

Elizabeth.—In such a case as yours we should try Brand's "Beef Jelly," Carnrick's "Peptonoids," and other *concentrated* foods for a time. As these foods are easily digested, and contain a full amount of nutriment, the stomach would thus be allowed a rest. Give up tea and coffee for a time, and try milk instead. Food should be very light. By experimenting in this way on your dietary you may be able to improve your state vastly. See also advice to "Co-operation" above.

A Banff Man.—You are evidently of highly nervous temperament, and the symptoms you name are not unusual in such cases. The tonic you mention should certainly be tried. See to your general health. Food to be nourishing, plenty of sleep, and above all, extreme regularity in habits.

W. G. H.—The attacks are possibly due either to some irregularity of diet (you do not mention your habits or food) or to some

less obvious cause. Attend very carefully to the condition of stomach and bowels. From what you say regarding flatulence, we incline to the belief that some error in digestion lies at the root of your affection. See advice to "Co-operation" above. Glad to advise further, if necessary.

J. A. J.—1. See HEALTH, No. 26, page 6, for a remedy for freckles. 2. Use simple Vaseline as an application to the legs and elbows. 3. The remedy can only be applied by a specialist in skin diseases. There are several in London who apply this remedy. We never recommend practitioners by name in HEALTH, but we can send you the address of a specialist privately on receipt of a stamped envelope.

SWEETNESS—1. Under the circumstances there should be no hesitation in following the physician's whole advice. Give his treatment a fair trial, and then judge of the effects. Droitwich can be tried later, if the present treatment is unsuccessful. The dry cupping is likely to do good. Why not act up fully to the physician's instructions? The prescriptions are both valuable ones. 2 Pulvermacher's belt should be tried; so-called "magnetic" belts are shams. 3. The secretion you name is not what you think it to be. No need to notice it.

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• HEALTH •

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, NOVEMBER* 2, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

WE are glad to note that the subject of open spaces and public recreation-grounds is coming prominently to the front as a topic of high social importance. In every great city there are many spots, including disused burial-grounds, which, at comparatively small cost, could be converted into pleasant breathing-spots, where the tired and jaded of the city's units might rest after the day's labours. The conversion of such places into recreation-plots, bright with flowers, is a work in which nothing that savours of desecration enters. To utilise the resting-places of past generations, to beautify them, and to convert what is often a damp, dreary collection of decaying tombstones into a "fair estate," is surely a work not merely of positive philanthropy, but of public health.

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"THE Metropolitan Public Garden, Boulevard, and Playground Association," whereof Lord Brabazon is chairman, is doing a great public work in the directions just indicated. We learn from the first annual report of this body, that it has planted trees in Mile End-road, London, at a cost of £40; while at a cost of £1,200 the disused burial-ground of St. Andrew, Holborn, has been converted into a public garden. The Kyrle Society laid out the burial-ground of St. George's, Bloomsbury, and to this useful work Lord Brabazon's Society gave a donation of £100. The Ecclesiastical Commissioners, we learn, desired to enclose a common of over twenty-two acres in extent, at Hammersmith, but this action was successfully opposed by the Society; while the project of the London and North-Western Railway to acquire St. James's burial-ground, Hampstead-road, was also opposed and practically in a successful manner. The Railway Company obtained only a small part of the ground, the remainder being transferred to the Vestry of St. Pancras, to be laid out as a public space.

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IT is much to be desired that societies similar to those now actively engaged in London in securing breathing-spaces for the people should exist in all great cities and towns. Sanitarians are never weary of preaching the benefits of fresh air; and one practical means of applying their teaching certainly consists in the formation of the resting-places, which in summer form recreation grounds, and which, "all the year round," constitute the "lungs" of the densely populated districts in which such open spaces are situated.

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A CORRESPONDENT of a medical contemporary directs attention to the frequent decay of the teeth seen in young mothers. The duties of nursing, &c., are assumed to draw from the maternal system the lime-compounds which are requised for the due nutrition of the teeth. The inference follows that the diet of the weakly child—which is rich in phosphates and other salts of lime—may be prescribed with advantage in such cases to the mother.

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MORE disease from the dairy in Dundee. The scarlet fever epidemic has already been mentioned, and now we learn typhoid fever has been traced to a similar source. St. Pancras, in London, has recently passed through an epidemic of typhoid fever, which was spread by milk. People should understand that of all fluids none absorb poisonous matters more readily than milk itself, or liquids of which milk forms part. Experiment has shown that milk will readily absorb the odour of turpentine, ordinary gas, musk, &c.; and that in some cases such odour was perceptible in the milk after fourteen hours. Carelessness in our homes in the matter of milk-exposure near infectious disease is, therefore, likely to result in the spread and propagation of such ailments. It is no uncommon thing to find in many houses a pantry used for the storage of milk placed near a sink or closet. Such a practice is highly dangerous, and should be avoided, even though no disease is present in the household.

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THE brain has generally been regarded as a part of our organisation which lies entirely outside the sphere of operative interference by the surgeon. It is not generally known that the matter of the brain itself is non-sensitive, and that persons have recovered from severe injuries of the head in which several ounces of brain-matter have actually been lost. Professor Ferrier, in a recent address on the functions of the brain, points out the interesting fact (to which, it may be added, surgery itself has been leading up) that in the near future it will be justifiable enough for surgeons to attempt to cure certain brain affections by the actual handling and examination of the great centre of the nervous system. Such a view of matters certainly forecasts a veritable triumph of the healing art; for it need hardly be said that there are no cases in face of which medicine stands more hopelessly than many forms of brain-disease. To-day operations are successfully performed which but a few years ago were regarded as essentially fatal in their nature. It is not too much to predict that brain-surgery will form a department of the medical art of the future from which great things may be hoped for in the interest of suffering humanity.

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THE use of that homely remedy, castor oil, is often rendered a matter of difficulty, owing to the nauseous taste of the oil. A highly useful piece of information, therefore, for the "family circle" comes to hand in the shape of a prescription whereby the taste of the oil may be completely disguised. Of castor oil one drachm is prescribed, and to this must be added the same quantity of glycerine, twenty minims tincture of orange-peel, five minims tincture of

senega, while cinnamon water is to be finally used so as to make up the whole to a half-ounce mixture. Such an emulsion is easily taken, even by children; and one of the trials of the nursery in the administration of the familiar medicine, may be avoided through the employment of the above formula.

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Dr. Andrew Wilson's lecture-dates for the week ending Nov. 10, are as follow:—Leith, Monday, Nov. 5; Paisley, Tuesday, Nov. 6; Burntisland, Nov. 7; Dalkeith, Nov. 8; and Greenock, Nov. 9. In reply to correspondents, it may be added that all communications respecting the Prince's Hall and other lectures in London should be addressed to Mr. John Flack, 74, Great Queen-street, London, W.C. The dates of the four Prince's Hall lectures on "Nerves and Brain," are Dec. 27 and 31, 1883, and on Jan. 2 and 5, 1884.

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Intelligence is at hand showing that a severe epidemic of trichina-disease is at present raging in Saxony. Nearly 400 persons are said to be affected, and deaths occur daily. The *trichina* is a minute "worm" found in the flesh of infected pigs. When eaten by man, the immature "worms" produce in his digestive system myriads of young. These bore their way from the stomach to the muscles of the chest; and it is needless to add that the migratory process is attended with severe pains, fever, and often leads to a fatal result. Once located in the human muscles, the new brood of worms can develope no further; and if the patient's strength tides him over the migration from the stomach, he is safe. In time, the worms, as they rest in the muscles, degenerate into mere specks of lime. Only when introduced (as were their parents) into the stomach of another warm-blooded animal can the new brood pass onwards to their full development; and in the case of the denizens of human muscle, it is needless to say there is no chance of this latter event being brought to pass. The prevention of trichina-disease is that of all other parasitic ailments—namely, the thorough cooking of the food. It is only on the continent, as a rule, where smoked sausages and like foods are consumed that the trichina-disease appears in its full development.

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Dr. Koch, whose researches into the nature of the "splenic fever" of animals were duly noticed in our "Germ Theory" articles, declares, as the result of his Egyptian researches, that cholera is due to a minute living particle, called a *bacillus*. We know that these *bacilli* are found associated with many, if not all, fevers, and with other ailments, of which consumption is probably the most notable. Koch is of opinion that these little living specks are the cause of the diseases with which they are associated; but science is not yet agreed concerning the correctness of this opinion. It is a highly difficult matter to say whether these living bodies are the actual originators of disease, or merely accompaniments of the fevers, &c., in which they appear, and medical opinion is at present divided over this highly important question.

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In the course of Koch's researches, the possibility of transmitting cholera to lower animals formed the subject of experiment. By means of cholera-matter containing the *bacilli*, attempts were made to infect various animals, but without success. So far, therefore, it would appear that cholera is specially a human disease. The living particle of cholera is declared by Koch to resemble most nearly the *bacillus* found in the disease affecting horses, and known as "glanders."

Original Essays

"Life is not to live, but to be well."—*Martial.*

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

SECOND PAPER.

The formation of fat in the body is a natural one when it proceeds within certain limits and when occurring at certain periods of existence. Every one must be familiar with the plump condition of healthy babies, but every one is not aware that the percentage of fat in the newly-born infant varies from ten to nearly twenty per cent. of its body weight, and is relatively greater than that found in the adult body, which is ordinarily about five or six per cent. of the entire weight of the individual. Women have a doubtful advantage in this matter, as in their normal physiological state the amount of fat immediately beneath the skin is rather more than one per cent. in excess of that in men, though men past the prime of life usually accumulate rather a large quantity of it. A certain amount of fat is found in the tissues below the skin of all healthy beings, even in those that one is accustomed to regard as thin people. The amount of this fat varies greatly and within physiological limits in different individuals, and in the same individual at different periods of life. Common observation must have taught us of this natural variation, and when the limits which we are ordinarily accustomed to meet with are overstepped, then the individuals are said to be either too fat or too thin.

Fat, which usually first appears during the sixth month before birth, becomes subsequently deposited in certain definite bodily regions, such as the tissue beneath the skin; and it seems to have a preference for certain portions of the body, so that, even in fat people, there are parts which are comparatively poor in fat, and this peculiar predilection of certain parts in man and animals for the accumulation of fat has not, up to the present, been satisfactorily explained; but it is probably due to local anatomical peculiarities. The tissues immediately beneath the skin belong to the class of tissues known to anatomists as *connective tissues*, and it appears to be chiefly by the conversion of the fixed cells of these tissues that fat cells are formed. The recent researches of Toldt, Flemming, and other German workers, though differing in some particulars, tend to confirm this view; but these writers do not deny the possibility of the formation of fat in other parts. As to the How? Why? When? and Where? of excessive fat-formation, these are questions which, even in their present imperfect state, would require far too much space and technical knowledge to be now considered. It will suffice for my present purpose to mention that an excessive supply of nourishment of certain kinds, coupled with a lack of sufficient activity in the individual, are very important factors in the production of corpulence.

It may, then, be taken as established, that in physiological conditions the accumulation of fat in definite parts of the connective tissues, and especially with subcutaneous (or under-skin) tissue, does occur; but whether this be due to special influences and to the arrangement of the blood-vessels of the part, or whether the regions in which fat is formed and deposited may be considered as *special fat-forming organs*, are still moot points. Of the internal organs, the liver is the only one which may, in a healthy state, participate (and this usually temporarily) in the deposit of fat. This organ is also very prone to a disease

termed *fatty degeneration*, and though the two conditions are distinct, the great pathologist Virchow long ago drew professional attention to the fact that there was a rather close connection between the healthy and diseased forms of fatty liver. Kölliker and Meissner observed normal forms of fatty liver, the former noting that in suckling animals a kind of fatty liver naturally occurred a few hours after digestion, while the latter made the observation that hens in full lay have plenty of fat cells in the liver, whilst hens which have ceased to lay for some time, however well nourished they might be, had no fat in that organ.

Between the ordinary plump and the fat person, the amount of fat deposited in the subcutaneous tissues varies within pretty wide limits, both in quantity and in the amount of its chemical constituents. In one and the same individual, the fat is not of the same chemical composition in all parts of the body, as it has been shown that the fat surrounding the kidneys contains less *olein* than the fat in the subcutaneous tissues; but the physiological changes in the latter appear to be more constant, and consist in a more rapid growth and conversion of the connective tissue cells into cells containing a fatty fluid, the characters of which differ according to the animal. Every one must be familiar with the different tastes and smell of beef, mutton, or pig's fat. These differences consist in their chemical constituents, and rest chiefly on the different proportions in which, in the various kinds of fat, different fatty acids are found; but whether the fatty fluid be taken from man or the lower animals, it consists essentially of what chemists have termed *olein*, *palmatine*, and *stearine*.

When fat begins to be abnormally deposited, it extends more or less rapidly, not only in the subcutaneous tissues, but also in the connective substance around, and in the interior of our organs. If unchecked this process may lead to the production of ungainly fatty *monsters*, such as the enormously fat woman who was exhibited in this country not long ago, and may have been seen by many of us. The "Claimant" is a case in point, and Daniel Lambert, whose effigy may be seen on a sign-board in Fleet-street, was another instance. In such people the subcutaneous fat is many inches in depth, and the fat in the omentum* and around the internal organs is also enormous. The next stage is *fatty degeneration of the liver*. The heart also becomes surrounded with fat, but this must not be confounded with fatty degeneration of its muscular tissue, which is a very serious malady, and one which is familiar to the public as a somewhat common cause of death during the administration of chloroform, &c. The accumulation of fat around the heart is only found in fat people, and may reach such a condition as to interfere with its action, and even by pressure to produce fatty degeneration of its muscular substance; so that, independently of the many other inconveniences of excessive fatness, this malady should be early and carefully treated, if only to prevent a fatty degeneration of the tissue of this most important organ.

* A structure in the abdomen, or belly, which, like an apron, covers and protects the intestines.

"SOBERING REMEDIES."

By M.D.

The cure of inebriety and the eradication of drunkenness as a habit degrading and destructive alike to body and mind, form tasks, the magnitude of which is equalled only by their high importance. Inquiries are frequently addressed, in the correspondence department of this journal, regarding the most reliable means for the cure of drunken habits, and for creating a distaste for alcoholic liquors. Whilst it is true that each case must be judged on its own merits, and that the cure in such instances must be as much of mental as of physical kind if it is to prove successful, it should be also known that there exist certain substances which possess the power of counteracting the effects of alcohol, and, in some cases, of inspiring a healthy distaste for drink at large. It may therefore prove useful, as well as interesting, from a health point of view, if we briefly indicate the nature of some "sobering remedies."

The difficulty of reform in cases of drunkenness is, of course, notorious. Charles Dickens, in his "American Notes," mentions the case of a man who voluntarily incarcerated himself in a prison in Philadelphia that he might be free from the temptation to drink. He remained there voluntarily for two years. There can be no question that judicious medical treatment assists the cure; while lively surroundings, change of scene, interesting occupation, and so forth, are all moral agents in the reform of the drunkard, on which the wise place much reliance. The late Sir Robert Christison, in a lecture delivered in 1858 before the Royal College of Surgeons of Edinburgh, gave an account of a visit he had paid to an institution which had been established in the Isle of Skye for the reformation and reclamation of confirmed inebriates. "Here," says the late distinguished physician, "we found ten gentlemen —cases, originally, of the worst form, of ungovernable drink-craving—who lived in a state of sobriety, happiness, and real freedom. One, who is now well, had not yet recovered from a prostrate condition of mind and body. The others wandered over the island scene-hunting, angling, fowling, botanizing, geologizing. . . . No untoward accident had ever happened among them. I may add that it was impossible not to feel that, with one or two exceptions, we were among a set of men of originally a low order of intellect. Radical cures are rare among them; for such men, under the present order of things, are generally too far gone in the habit of intemperance before they can be persuaded to submit to treatment. Nevertheless, one of those I met there, a very bad case indeed, has since stood the world's temptations bravely, for twelve months subsequent to his discharge."

It is a notable fact that the family to which the coffee-plant belongs contains a variety of species which appear to be singularly efficient in the alleviation of the symptoms produced by alcohol, and, what is far more important, in imparting a distaste for that substance; whilst so far as the stimulating properties of these plants are concerned, they form a highly valuable part of the domestic *materia medica*. Coffee itself contains a volatile oil, certain acids, and the active principle, *caffeine*, which corresponds to the *theine* found in tea. The differences between the action of coffee and tea consist, firstly, in the greater amount of stimulating power possessed by coffee. The pulse increases, under the influence of coffee, in force and frequency; but coffee is at the same time apt to be more oppressive to the stomach. Again, coffee possesses the valuable property of relieving the pangs of hunger and of alleviating fatigue. Exertion, undertaken upon a limited amount of food or rest, can be borne under the influence of coffee, and several observers have maintained that its use diminishes the processes of waste which occur continually in the animal economy, and that food is made to "go further" by its action. All writers agree, moreover, in saying that coffee, in addition

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

to its known value as an antidote in cases of opium-poisoning, alleviates and removes the effects of alcoholic stimulation. The use of "black coffee" as an addendum to the dinner-table where wine is consumed, thus possesses a physiological justification.

Included in the order of the coffee-plant is a product which has recently been brought under our notice, the Kola-nut of West Africa, imported by Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, London, W. Results of the analysis of this nut show that kola-nut is exceedingly rich in the caffeine principle to which coffee itself owes it powers, while it also possesses a quantity of *theobromine*, the substance to which cocoa owes its active power. This nut has been used in foreign countries as a remedy in diseases and affections of the liver and digestive system, and by some nations kola is regarded—as we have seen coffee is esteemed amongst ourselves—as a means of promoting endurance under fatigue. In this latter respect kola resembles the famous coca leaves of South America. Those who may have the opportunity of using kola-nut in cases of alcoholism and ordinary drunkenness, should certainly give this nut a trial. A teaspoonful of the powdered nut in water or milk is recommended as a cure for the effects of alcohol, while half a teaspoonful taken shortly after a meal is the dose calculated to act as a strength stimulant and as a means of warding off fatigue. As a beverage in place of tea and coffee, kola-nut may be used by placing a tablespoonful to a pint of boiling water, sugar and milk being added as in the case of coffee itself. The evidence that kola-nut acts as an antidote to the craving for "strong drink" seems to rest on a sound chemical and physiological basis, and this substance is therefore worth a trial in those distressing cases where the craving for alcohol refuses to be satisfied by ordinary means.

Concerning other remedies for drunkenness, the information which medical science is able to lay before us, shows that the strictest attention to the general health, and the improvement of the subject's surroundings, may be said to sum up the treatment of this grave social disease. Dr. Chambers has laid down the rule that the safest treatment "for the remorse of a guilty stomach" consists in the free dilution, for a time, of all foods and drinks with water. Tonics, for a time, may be used with advantage, and the diet must not be spare, but should be nourishing, while it is non-stimulating. Bromide of potass given cautiously at night, well diluted in water, has a marked effect in lessening the craving for stimulants. Regarding the opinion that a gradual reduction of the alcohol is safer than its sudden and final cessation, medical authority would seem to be on the side of instantly cutting off the supply where a cure is to be attempted. But it should be noted that where this latter plan is pursued the diet should be carefully regulated, the health of the patient made a matter of strict supervision, and quiet and rest enforced as means of avoiding any evil effects that may arise from the sudden withdrawal of the stimulant.

The Influence of the Doctor in Health-Resorts.—"Each winter resort," says John Richard Green, in *Stray Studies*, "brings home to us the power of the British doctor. It is he who rears pleasant towns at the foot of the Pyrenees, and lines the sunny coasts of the Riviera with villas that gleam white among the olive-groves. It is his finger that stirs the camels of Algeria, the donkeys of Palestine, the Nile boats of Egypt. At the first frosts of November the doctor marshals his wild geese for their winter flitting, and the long train steams off, grumbling, but obedient, to the little Britains of the south."

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HOW TO CURE CHILBLAINS.

This troublesome affection is apt to be prevalent at this and other times of the year, and the following variety of prescriptions from the *Chemist and Druggist*, the *British Medical Journal*, and *New Remedies*, may interest our readers:—

1. Liniment of aconite. [This is officinal in the Br. Phar. It equals 1 part of aconite to each part of product, and may be applied with a camel's-hair brush, avoiding abraided surfaces.] 2. Equal parts of the foregoing and oil of turpentine. 3. An ointment of lard and mustard rubbed in for twenty minutes before a fire. 4. Hot water. 5. Galvanism. 6. Twenty minims of tincture of arnica in an ounce of rectified spirit, well rubbed in, night and morning, with flannel. 7. Curd soap, ʒ i.; water, ʒ iv.; dissolve with heat and add camphor, ʒ iv.; rectified spirit, ʒ vi.; essence of bergamot, 45 minims; lastly, add strong water of ammonia, ʒ vi. 8. Sir Astley Cooper recommended a strong solution of acetate of lead. 9. Mr. W. Squire gave opium internally. 10. Dr. T. F. Pearce used nitrate of silver locally, with cold bathing, abstinence from alcohol, and the use of large boots. 11. Billroth recommends ointment of ammoniated mercury, cantharides, &c.

12. Avoid the constant wearing of gloves out of doors. 13. Faradisation (with an electro-magnetic machine, if preferred), applying one pole over the chilblain, the other at any convenient place on the body, and using the current as strong as it can conveniently be borne, and from three to five minutes. Immediate relief is said to follow, and after two or three days (using the current twice daily) the trouble will have disappeared if the skin be unbroken. If the skin is broken, more time will be required. 14. Mr. J. Johnston recommends, from experience, pulverised iodoform, ʒ iij.; thymol, ʒ ss.; essential oil of Eucalyptus globulus, ʒ i. Rub well in a mortar till mostly dissolved, and apply freely to the inflamed parts twice or thrice daily. When dry, cover loosely with cotton-wool. 15. Mr. Thomas Price advises nitrate of potash ʒ ij. dissolved in vinegar, ʒ vi.; well rubbed over the chilblains.

16. Vigorous daily walking. 17. Dr. E. W. Alabone declares the following to be almost infallible in curing unbroken chilblains: one egg, well beaten; diluted acetic acid, ʒ viij.; spirit of camphor, ʒ i.; oil of turpentine, ʒ ss.; tincture of arnica, ʒ i.; soak the affected parts in hot water and dry them, shake the lotion well, and rub it in and allow it to dry before the fire.

18. Venice turpentine, ʒ ij.; castor oil, ʒ i.; collodion, ʒ i. Paint it frequently over *unbroken* chilblains with a camel's-hair brush. If they are broken, use the following. 19. Camphor ointment [the Russian formula for this is, 3 parts of camphor; 1 of white wax, and 9 of lard] ʒ ij.; Vaseline, ʒ i.; chloroform, ♏x. 20. Marjolin recommends:

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

Peru balsam, ʒ ss. ; rectified spirit, ʒ ss. ; mix together and add dilute hydrochloric acid, ʒ ss. ; and compound tincture of benzoin, ʒ ss. Occasionally rub a little into the affected part or apply it on lint. This should be used on unbroken skin only. 21. Turner's cerate. It is made of prepared calamine, yellow wax, each 3 oz. ; lard, 1 lb. May be used when the skin is broken.

22. Dr. Alfred Wise advises that the parts be painted night and morning with the following :—soap liniment and belladonna linament, each ʒ ij. ; "liquor epispasticus," ʒ iv. Care must be taken not to cause blistering by too freely using it. 23. Paint with a solution of nitrate of silver, 30 gr. to the ounce, until the skin is blackened. 24. If blistering has occurred, use poultices in the daytime and iodoform ointment (gr. xxx. to ʒ i.) at night.

Cooley gives the following :—25. Soap liniment, 1 oz. ; cajeput oil, ¼ oz. ; tincture of cantharides, ¼ oz. 26. Sal ammoniac, ½ oz. ; vinegar, 5 oz. ; spirit of rosemary, 1 oz. 27. Oil of turpentine, 1 oz. ; camphor, ¼ oz. ; Goulard's extract, ¼ oz. 28. ("Dr. Grave's Preventive") Sulphate of copper, 11 grs. ; water, 1 oz. Apply with a camel's-hair brush, and, when dry, cover with simple ointment. 29. "Sal enixum" [Bisulphate of potash, or, more commonly, the crude salt, resulting from the manufacture of nitric acid], alum, and sulphate of zinc, each ¼ oz. ; water, 1 pint. Apply frequently. 30. Muriatic acid, ½ oz. ; friar's balsam [or compound tincture of benzoin], 3½ oz. ; mix. 31. Swediaur's paste, which consists of bitter almonds, 8 oz. ; honey, 6 oz. ; powdered camphor, ½ oz. ; flour of mustard, ½ oz. ; burned alum, ¼ oz. ; olibanum, ¼ oz. ; yolks of three eggs ; beat together to form a paste. Rub a portion on the part affected, moistened with water night and morning, then wash with warm water and dry with a cloth.

32. Wahler's ointment for broken chilblains : black oxide of iron, bole, and oil of turpentine, of each ʒ i. ; rub together and add to 1 oz. of melted resin cerate. 33. Locatelli balsam, 1 oz. ; citrine ointment, ¼ oz. ; balsam of Peru, 20 drops [Locatelli's balsam used in this formula is made as follows : melt together 4 oz. yellow wax, 1 lb. of common oil (by which we presume olive oil is intended), and 1 lb. of Venice turpentine, placing with them 4 oz. of alkanet root wrapped in a linen bag]. 34. A Russian remedy consists of the dried parings of cucumbers, the inner surfaces of which are softened with water when needed and applied to the part affected. 35. Tincture of arnica, rose water, glycerin, of each 3 parts, spirit of camphor, 1 part. 36. Sulphurous acid, glycerin, of each 1 part ; distilled water, 2 parts.

37. Another remedy which is just now going the rounds of the journals is said by Dr. Lapatin to have been found serviceable during the Turko-Russian war. Equal parts of *dilute* nitric acid and peppermint water are to be applied with a camel's-hair pencil, at first daily, and later twice a day. After three or four days the skin will peel off.

Two correspondents of the *Pharm. Zeitung* recommend the following applications :—1. In the case of chilblain with broken skin :—Yellow wax, 15 parts ; rape oil, 50 parts ; yolk of egg, 1 part ; acetate of lead, 5 parts.—M. 2. When the skin is intact :—Tincture of iodine, 2 parts ; ether, 15 parts ; collodion, 50 parts.

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation : "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HYGIENE IN RELATION TO EDUCATION AND YOUTH.

By Edward H. Riches, LL.D., F.R.A.S.

THIRD PAPER.

The mind of old or young which stagnates is sure to react deleteriously upon the body ; and a cheerfulness of spirit should at all times be insisted on, and especially with the young ; all morbid ideas, too, as to right and wrong being essentially bad. There is a German aphorism which translated runs thus : "Joy, temperance, and repose, slam the door on the doctor's nose" ; and these three elements may, without much trouble, be generally attained. The minds of children during the earlier hours of the day are better prepared to receive instruction, the body having been resting in sleep, all the powers are thereby fresher than in the evening. But even here it is the medium course which is the only right one to adopt. To work for two hours, or even for one hour, with an empty stomach, is a mistake adopted in too many schools. Breakfast should be taken by pupils before study, and this may be regarded as a fact without entering into any technical argument on the matter. As pure air is one of the great essentials to health, the size of a school-room must be ample, and, provided there be proper ventilation, there should be allowed 300 cubic feet of space, at least, to each pupil. It is well known that with young people respiration goes forward much more rapidly than with older people ; and, remembering that this is so, even though their lung space be less, it is quite necessary to allow them as much space as is required for grown-up people. It would be well, then, if every room were at least 12 feet high ; then a room, say, 30 feet long and 20 feet broad would be ample for twenty pupils ; and forty pupils might occupy a room of 40 feet long and 30 feet broad. One great and prevalent mistake is to have a uniform height of desk and form in school-rooms ; the desk, too, should never be flat like a table. Separate desks with a seat with a back are now made, and it would be well if they were generally adopted. It is pitiable to see a boy or a girl at an uncomfortable height sitting at a flat desk ; the muscles of the back and neck are, under these conditions, out of gear and sadly distressed. The *back* to a child's seat, too, is not the useless luxury our forefathers would, with dismay, have regarded it ; for surely it must be better for the body (and so for the brain) to rest itself naturally, rather than by that injurious action of boy and girl which calls forth so frequently the stereotyped command of the teacher : "Will you keep your back straight there ! Sit upright !" It is necessary to old and young alike, when sitting for some time at a desk, to wish to change a position, in order that certain muscles may be rested, and this must be done by legitimate means. The suitable desk and seat, then, are of great moment, if we are to believe what Dr. Liebreich says, namely, that *spinal deformity* and *short-sightedness* result from defects in this position of a pupil.

We remarked above, that though the lungs of a child occupy less space than those of a grown-up person, still, considering that he respires more frequently, it is only right that he should be allowed so much cubic space. An adult human being inspires and expires from his lungs ten gallons

of air every five minutes. It may be remembered, too, that he exhales unhealthy constituents in every breath; absorbing oxygen from the air around him and giving out from his lungs carbonic acid. Ventilation, then, of a school-room is of great moment, and to assist in this matter a dusting and washing of floors, desks, and seats should be insisted on by every head of a school. Dr. Parkes said that 30 per cent. of all who have recourse to the physician owe their complaints to their food! It would be quite possible to enter minutely into the best and most wholesome form of diet for children, but a sufficiency of digestible and flesh-forming matter may be taken as a broad rule, which one will be safe in following. With a young child there is always an abundance of fatty element which must be kept up, and wholesome sweets and sugar are always desirable. Good soups should always appear on every school dining-table, for they are the means of introducing at once into the system half-digested matter, which enriches and supports.

Bread should be twenty-four hours old and well covered with butter. If a child takes milk-and-water to drink, there should be at least half a pint of milk allowed, to which water may be added; for one may be sure that the milk, as a rule, is absent of cream, or that water has by some means already found its way into it before it leaves the milk-cart. Dinner should consist partly of meat and farinaceous food, such as pudding with sugar, fat, or treacle, alternating with vegetables and fruit. Neither beer nor wine is necessary to the growing child; and if all parents who wish that their children may be allowed it at school could be taught this truth, so much the better for the child now, and for the man or woman to be developed. Hufeland, who wrote before we heard of blue-ribbon armies, said that: "He who deprives his child of wine will have secured his happiness hereafter." A child of ten years of age should have about four ounces of meat at dinner, with soup or pudding, but double this quantity will be required if he partakes of only meat and vegetables. Cheese is always bad for young people, and should be avoided. The constituents of all food are *proteids*—that is, gluten of wheat, albumen, and casein of cheese, flesh forming materials; *amyloids*, such as starch, sugar, and fat, which produce heat and fat; *minerals*, which are contained in all vegetables, such as potass and soda, &c., highly necessary to maintain sound health.

According to the age and constitution of the boy or girl, the amount of sleep necessary should be determined. As sleep to the young contributes greatly to their health, we need not be niggardly in indulging them in this matter. Just as young animals are nearly always sleeping, except when awake to take their food—and in the vegetable world one may observe that the young leaves open later and close earlier than the older ones—so a child requires more sleep than an older person. Out of the twenty-four hours, adults require eight hours for sleep at least; and it may be taken as a fact that a child from seven to ten years of age who goes to bed between eight and nine o'clock, should not be disturbed till seven o'clock the next morning. Then, again, the position of a child in bed should be attended to, for as it passes nearly half its time in sleep, this is a matter which should be enforced as far as possible.

A great deal more may be said from a hygienic point of view respecting those matters which are here but necessarily briefly touched upon. And it may be remembered that in reference to the subject of hygiene in relation to education and youth, heads of schools and parents would do well to give some thought and attention from a hygienic view to such matters as baths, gymnastics, singing and music, rewards and punishments, time for and duration of occasional holidays and vacations, and school routine generally. And last, but not least, to that moral and religious training which the young of both sexes should have to pass through, which, even apart from the mere consideration of bodily health, will act as a real formative power, in casting their later years either in the symmetrical mould of conscientious happiness and health, or in the cracked vessel of mental and physical unrest, disease, and but a half enjoyed existence.

Pleasures of a Doctor's Life — The following are some of the sweets of a doctor's life. If he visits a few of his clients when they are well, it is to get his dinner; if he does not do so, it is because he cares more for the fleece than the flock. If he goes to church regularly, it is because he has nothing else to do; if he does not go, it is because he has no respect for the Sabbath or religion. If he speaks to a poor person, he keeps bad company; if he passes them by, he is better than other folks. If he has a good carriage, he is extravagant; if he uses a poor one on the score of economy, he is deficient in necessary pride. If he makes parties, it is to soft-soap the people to get their money; if he does not make them, he is afraid of a cent! If his horse is fat, it is because he has nothing to do; if he is lean, it is because he is not taken care of. If he drives fast, it is to make people believe somebody is very sick; if he drives slow, he has no interest in the welfare of his patients. If he dresses neat, he is proud; if he does not, he is wanting in self-respect. If he works on the land, he is fit for nothing but a farmer; if he does not work, it is because he is too lazy to do anything. If he talks much, "we don't want a doctor to tell everything he knows;" if he does not talk, "*we like to see a doctor social.*" If he says anything about politics, he had better let it alone; if he does not say anything about it, "we like to see a man show his colours." If he visits his patients every day, it is to run up a bill; if he does not, it is unjustifiable negligence. If he says anything about religion, he is a hypocrite; if he does not, he is an infidel. If he uses any of the popular remedies of the day, it is to cater to the whim and prejudices of the people to fill his pockets; if he does not use them, it is from professional selfishness. If he is in the habit of having counsel often, it is because he knows nothing; if he objects to having it on the ground that he understands his own business, he is afraid of exposing his ignorance to his superiors. If he gets pay for one-half his services, he has the reputation of being a *great manager*. Who wouldn't be an M.D.?—*American Medical Monthly.*

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE UNSANITARY HOMES OF THE RICH.

By C. F. Wingate.

(From the *North American Review.*)

PART IV.

Often the cry is raised that people should abolish plumbing altogether in houses. Such radical measures, however, are needless and unwise. Good plumbing is healthful, convenient, and comfortable, and it is as absurd to talk of abolishing it as of abolishing cleanliness, sunlight, or fresh air. Many persons try half-measures, and remove basins from bedrooms, but ignore the more obvious and serious defects of pan water-closets, foul slop-sinks, and other fixtures which are found in the very finest houses in close proximity to living and sleeping rooms. Still others have recourse to devices for excluding or destroying sewer-gas, so widely advertised of late, but which have justly been described as humbugs and frauds upon the public.

Thus far I have referred specially to houses owned by their occupants. There is still a larger class, that of leased dwellings, owned by individuals or by large proprietors, as the Astor, Rhinelander, Goelet, or Lorillard estates. They are situated in fashionable sections, and command a high rental. The plumbing is often elaborate, and was originally of average good quality. Sanitary science, however, has made such rapid strides of late, that the materials, appliances, and methods of ventilating fixtures and pipes in use ten, or even five, years ago, to afford security against sewer-gas, are now obsolete. Plumbing practice in the past was based on English experience, and has been largely modified to suit our climate and domestic habits, while experience has shown the necessity of using heavier material, better and more costly fixtures, and more elaborate methods of trapping and ventilation. As the lead soil-pipes, brick and stone drains, and cheap and inferior fixtures, to be found in most leased dwellings a decade since, have yielded to the wear and tear of time, landlords have made improvements, but in an economical fashion, having always their own interests in view. It is but natural that property owners should be slow to spend money for the benefit of their tenants. They usually employ a plumber who has sufficient discretion not to put his customer to excessive expense, by doing everything a tenant may want or which his own judgment may tell him should be done to insure safety. The result is systematic patchwork and deception, by which the tenant is frequently led to think that everything has been made right, although dangerous defects still exist. Often, only through the intervention of the Board of Health can landlords be forced to provide improvements. Again, even where a tenant himself pays for needed alterations, the plumber is ashamed to stultify himself, and hence omits to completely cure existing defects. Flagrant cases of this kind have come up in my experience. A gentleman rents a house in the belief that it is in good sanitary condition. He is assured by the landlord that all sanitary safeguards are provided. In time bad odours are noticed and sickness breaks out. The landlord, when applied to, sends his plumber, who makes some slight changes, pronounces everything all right, and goes his away. Again trouble ensues, the same course is repeated, and finally the landlord declares that nothing more can be done. Recourse may then be had to the Board of Health, whose inspectors will suggest some additional changes, or may not find anything to correct. Finally, a sanitary expert is called in, who usually discovers some serious defects in the drainage arrangements. The tenant is naturally indignant, and asks an explanation. The landlord refers to his plumber, who, when brought to book, admits that he had considered the interest of his employer alone, and made only such improvements as he thought the latter would approve and pay for.

Within a few years there has been a popular *furore* in favour of apartment houses, and numbers of flats of colossal proportions and costly construction have been built and quickly leased at high rentals. These buildings, however, are often no better in their sanitary arrangements than the average private dwellings. As a rule, they are overheated, especially the halls; usually there is inadequate ventilation, dark rooms abound, and the plumbing, while claimed to be of the best, is lacking in many essentials. Lastly, there is great danger from fire in these buildings. In more than one large apartment house wooden stair-ways surround elevator shafts, which, as repeated experience has shown, will serve to convey a fire almost instantaneously from cellar to roof. Again, the very care taken to deaden floors and prevent the transmission of sound will make it difficult to alarm the tenants in case of fire. The fact that insurance companies consider apartment houses as extra hazardous risks tells its own story; and the possibility of a fire in some of these huge structures must be anticipated with a dread which a late conflagration in a flat more than justifies.

The sanitary condition of the summer homes of our wealthy citizens at the seashore and other health resorts is on a par with that of their city residences, with this difference, that the drainage arrangements are usually executed by country plumbers, who are even inferior to city mechanics, while the universal dependence upon leaching, and unventilated cesspools in proximity to wells and cisterns, is a constant source of danger. The repeated epidemics of typhoid fever and malarial diseases in localities where such conditions prevail, and the fact that visitors are seized with these maladies after their return to the city, are ample evidence of the unhealthfulness of summer resorts. Despite the outdoor life and the exercise which visitors enjoy, it is beyond dispute that the health of the city as a whole is higher than that of the country, and that the risks of a summer spent at so-called health resorts are of a serious nature.

After seeing the ills which beset our wealthy householders in their domestic surroundings, if we visit their counting-rooms and offices, where the male members of the family amass the wealth so lavishly displayed in their homes, still further surprise is experienced. Take any one of the huge buildings in a city, where hundreds of firms, with their clerks, are daily absorbed in business affairs, and what do we find? Into a vast number of offices the direct rays of the sun never enter, and they are dimly lighted by shafts, by reflectors, or by gas. Their sole dependence for air are windows, which are rarely opened, and which look upon small, dingy courts or narrow, gloomy streets, from which lofty adjacent buildings exclude all light. Ventilation is scarcely known in these places. Elaborate and costly devices are often provided to carry off foul air, but they constantly fail to act, as there is no provision for pure air or for providing heated currents to carry away the

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

impure atmosphere. In the private offices of the heads of firms open fires may give some relief; but steam coils are the main dependence for warmth, and slowly and remorselessly roast the occupants with their dry, unvarying, and debilitating temperature.

Many offices are situated in basements, just over damp cellars; others are off dark, dank halls in close proximity to foul plumbing fixtures; while everywhere the unwholesome fumes from gas-jets, the burnt dust which settles on steam-coils, and the impalpable impurities from samples or goods stored near by, contribute to pollute the atmosphere. Any plumbing is thought to be good enough for business buildings. The wear and tear to which it is exposed from careless clerks and boys, and the neglect of janitors, with the absence of water for flushing, all contribute to make it unwholesome. Furthermore, the sewers are often very bad, in many cases, stone drains, roughly constructed, without proper pitch or ventilation, and with no means to keep them free from deposits. They were originally intended to carry off surface-water, and are wholly unsuited to convey sewage. There is no barrier to prevent sewer-air from finding its way into buildings, nor are soil-pipes carried through the roof of full size to permit its escape into the atmosphere above. Hence such buildings are found saturated with sewer-gas, and their occupants, too absorbed in business cares to heed their unsanitary surroundings, learn only too late what are the physical effects of such exposure.

These conditions undoubtedly explain the worn, weary, blanched, and prematurely aged look of so many business men. The wholesale introduction of steam for heating office buildings threatens to increase the crop of evils just pointed out, and to intensify the nervous strain which Dr. Weir Mitchell and other specialists note as so destructive to health. Our people are starving for the want of fresh air, and it is no wonder that the tired broker or merchant, after a toilsome day in his stuffy office, seeks relief in stimulants or becomes the victim of chronic dyspepsia, nervous exhaustion, insomnia, and brain paralysis. Some of the most remarkable examples of unsanitary conditions in my experience have been in business offices, and in more than one instance in new buildings supposed to have perfect plumbing. In the directors' rooms of wealthy corporations and the private offices of bank and insurance presidents these evils are found in their worst form.

Here, then, are certain facts which are sustained by the steady growth of zymotic disease and by the evidence of many observers, who have had like opportunities with myself to inspect dwellings. The question may pertinently be asked, What are our wealthy citizens going to do about it? Will they continue to pursue the ostrich policy which has prevailed of late years with such direful results? In other instances, when large numbers of people have been threatened with danger, societies have been formed to diffuse knowledge and inaugurate reforms. It would, therefore, seem timely to found an Association for Improving the Condition of the Rich, to send missionaries and to diffuse tracts among the benighted class, who, as has been shown, are exposed to such dangers. Undoubtedly the whole community would be interested in so benevolent a movement, and would contribute liberally towards its support.

POWNCEBY'S PURE WINES AND BRANDIES, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from POWNCEBY & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[ADVT.]

SWORD-SWALLOWERS.

WHEN a physician introduces his finger, the handle of a spoon, or a pencil into the throat of a patient, the latter experiences an extremely disagreeable sensation. Any touching, however slight it be, of the pharynx causes strangling, pain, and nausea, and the organ reacts with violence against the obstacle that presents itself to free respiration. There is no one who has not more than once experienced this disagreeable impression, and for this reason we are justly surprised when we meet with people who seem to be proof against it, and who, for example, introduce into their pharynx large, solid, and stiff objects like sword-blades, and cause these to penetrate to a depth that appears incredible. It is experiments of this kind that constitute the tricks of sword-swallowers.

These experiments are nearly always the same. (Fig. 2.) The individual comes out dressed in a brilliant costume. At one side of him there are flags of different nationalities surrounding a panoply of sabres, swords, and yatagans, and at the other a stack of guns, provided with bayonets.

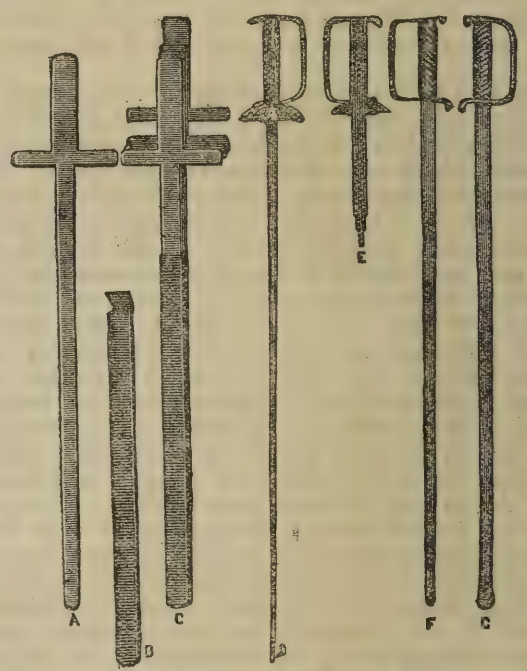

Fig. 1.—Sword-swallower's Apparatus.

Taking a flat sabre, whose blade and hilt have been cut out of the same sheet of metal (Fig. 1), the blade being from 55 to 60 centimètres* in length, he introduces its extremity into his throat, taps the hilt gently, and the blade at length entirely disappears. He then repeats the experiment in swallowing the blade at a single gulp. Subsequently, after swallowing and disgorging two of these same swords, he causes one to penetrate up to its guard, a second not quite so far, a third a little less still, and a fourth up to about half its length, the hilts being then arranged as shown in Fig. 1 (C).

Pressing, now, on the hilts, he swallows the four blades at a gulp; and then he takes them out leisurely, one by one. The effect is quite surprising. After swallowing several different swords and sabres, he takes an old musket, armed with a triangular bayonet, and swallows the latter, the gun remaining vertical over his head. Finally, he borrows a

* A centimètre is ·39 of an English inch.

large sabre from a dragoon who is present for the purpose, and causes two-thirds of it to disappear. As a trick, on being encored, the sword-swallower borrows a cane from a person in the audience, and swallows it almost entirely.

A certain number of spectators usually think that the performer produces an illusion through the aid of some trick, and that it is impossible to swallow a sword-blade. But this is a mistake, for sword-swallowers who employ artifices are few in number, and their experiments but slightly varied, while the majority really do introduce into their mouth and food-passage the blades that they cause to disappear. They attain this result as follows :—

The back parts of the mouth, despite their sensitiveness and their rebellion against contact with solid bodies, are capable of becoming so changed through habit that they gradually get used to abnormal contacts. This fact is taken advantage of in medicine. It daily happens that persons afflicted with disorders of the throat or stomach can no longer swallow or take nourishment, and would die of exhaustion were they not fed artificially by means of the œsophageal tube. This latter is a vulcanised rubber tube which the patient swallows, after the manner of sword-swallowers, and through the extremity of which an aid introduces milk or bouillon. But the patient, before being able to make use of this apparatus, must serve a genuine apprenticeship. The first introduction of the end of the tube into the pharynx is extremely painful, the second is a little less so, and it is only after a large number of trials, more or less prolonged, that the patient succeeds in swallowing 30 or 40 centimètres of the tubing without a disagreeable sensation.

The washing out of the stomach, performed by means of a long flexible tube, which the patient partially swallows, and with which he injects into and removes from his stomach a quantity of tepid water, by raising the tube or letting it hang down to form a syphon, likewise necessitates an apprenticeship of some days; but the patient succeeds in accustoming his organs to contact with the tube, and is finally able, after a short time, to swallow the latter with indifference at least, if not satisfaction.

With these sword-swallowers it is absolutely the same; for, with them, it is only as a consequence of repeated trials that the pharynx becomes sufficiently accustomed to it to permit them to finally swallow objects as large and rigid as swords, sabres, canes, and even billiard-cues.

Swallowers of forks and spoons serve an analogous apprenticeship. As known, the talent of these consists in their ability to introduce a long spoon or fork into their throat while holding it suspended by its extremity between two fingers. This trick is extremely dangerous, since the œsophagus exerts a sort of suction on all bodies that are introduced into it. The spoon or fork is, then, strongly attracted, and if the individual cannot hold it, it will drop into his stomach, whence it can only be extracted by a very dangerous surgical operation—*gastrotomy*. It was accidents of this kind that made the "forkman" and the "knifeman" celebrated, and, more recently, the "spoonman," who died from the effects of the extraction from his stomach of a syrup-spoon twenty-four centimètres in length.

All sword-swallowers do not proceed in the same way. Some swallow the blade directly, without any intermediate apparatus; but in this case, their sabres are provided at the extremity, near the point, with a small bayonet-shaped appendage over which they slip a gutta-percha bale without the spectators perceiving it (Fig. 1, F and G). Others do

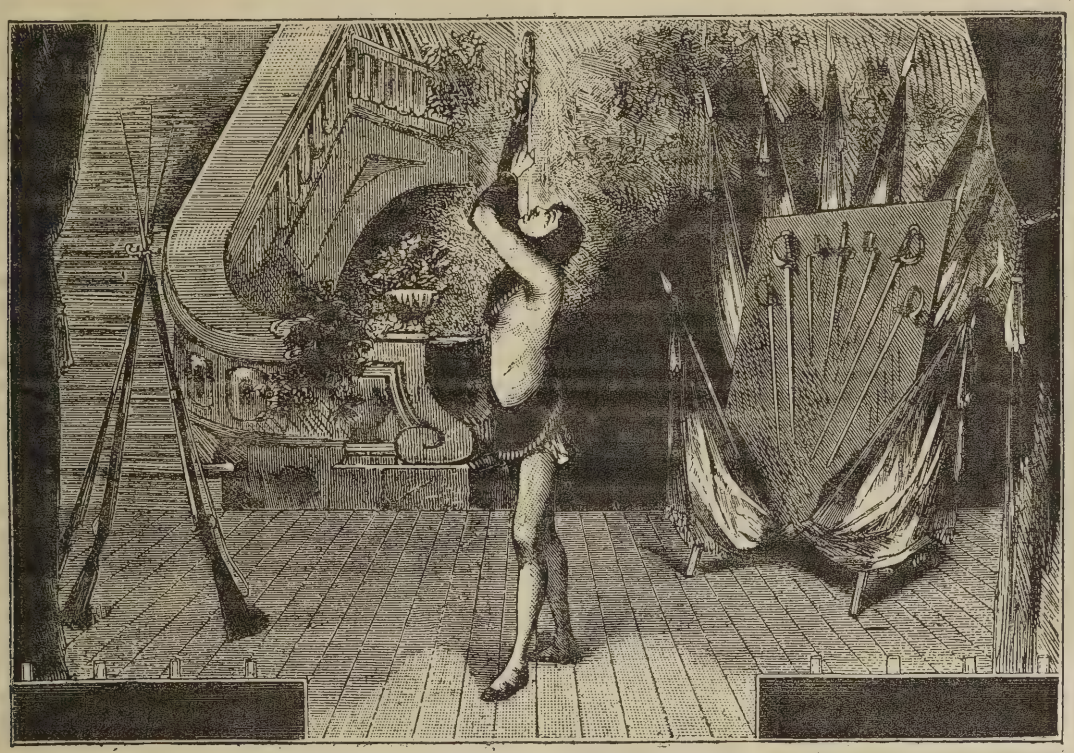

Fig. 2.—A Sword-swallowing Exhibition.

THE "SPÉCIALITÉ" LIME JUICE, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—FELTOE & SONS Albemarle-street, London, W.—[ADVT.]

not even take such a precaution, but swallow the sabre or sword just as it is.

This is the mode of procedure of an old Zouave especially, who has become a poor juggler, and who, in his experiments, allows the spectators to touch, between his sternum, the projection that the point of the sabre in his stomach makes on his skin.

But the majority of sword-swallowers who exhibit upon the stage employ a guiding tube which they have previously swallowed, so that the experiments they are enabled to perform become less dangerous and can be varied more. This tube, which is from 45 to 50 centimètres long, is made of very thin metal. Its width is 25 millimètres,* and its thickness 15 millimètres (Fig. 1, B.) These dimensions permit of the easy introduction of flat-bladed sabres, among other things, and of the performance of the four-sabre experiment, and of the introduction of sabres and swords of all kinds.

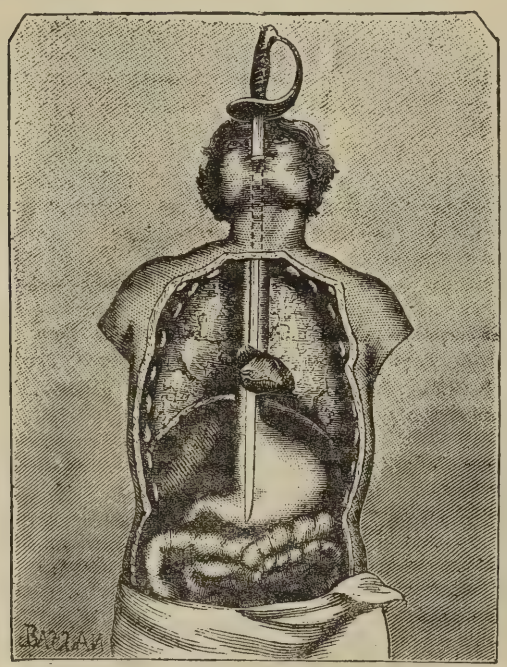

Fig. 3—The Sword as Swallowed.

To explain the matter from a physiological standpoint, the sabre swallowed by the performer enters the mouth and pharynx first, then the œsophagus, traverses the cardiac opening of the stomach, and enters the latter as far as to the antrum of the pylorus—the small cul-de-sac of the stomach. In their normal state these organs are not in a straight line, but are placed so by the passage of the sword. In the first place, the head is thrown back so that the mouth is in the direction of the œsophagus, the curves of which disappear or become less; the angle that the œsophagus makes with the stomach becomes null; and finally, the last-named organ distends in a vertical direction and its internal curve disappears, thus permitting the blade to traverse the stomach through its greater diameter —that is to say, to reach the small cul-de-sac (Fig. 3). It should be understood that before such a result can be attained the stomach must have been emptied through fasting on the part of the operator.

* A millimètre is ·039 of an English inch.

The depth of 55 or 60 centimètres to which these men cause their instruments to penetrate, and which seems extraordinary to spectators, is explained by the dimensions of the organs traversed. Such lengths may be divided thus:—

Mouth and pharynx	10 to 12
Œsophagus	25 to 28
Distended stomach	20 to 22
	55 to 62

According to the stature of the individual, a length of organs of from 55 to 62 centimètres may give passage to swallowed swords without inconvenience.

Sword-swallowing exhibitors have rendered important services to medicine. It was due to one of them—a swallower of both swords and pebbles—that in 1777 a Scotch physician, Stevens, was enabled to make the first studies upon the gastric juice of human beings. In order to do this, he caused this individual to swallow small metallic tubes pierced with holes and filled with meat according to Reaumur's method, and got him to disgorge them again after a certain length of time. It was also sword-swallowers who showed physicians to what extent the pharynx could become habituated to contact; and from this resulted the invention of the Foucher tube, the œsophageal tube, the washing out of the stomach, and the illumination of the latter organ by the electric light.

It sometimes happens that sword-swallowers who exhibit in public squares and at street corners are, at the same time, swallowers of pebbles, like him whose talents were utilised by Stevens, that is to say, they have the faculty of swallowing pebbles of various sizes, sometimes even stones larger than a hen's egg, and that, too, to the number of four, five, or six, sometimes more, and of afterward disgorging them one by one through a simple contraction of the stomach. Here we have a new example of the modification of sensitiveness and function that an individual may secure in his organs by determination and constant practice.

In conclusion, let us say a word in regard to the tricks that produce the illusion of swallowed swords or sabres. One of these, which deceives only at a certain distance, consists in plunging the sabre into a tube that descends along the neck and chest under the garments, and the opening of which, placed near the mouth, is hidden by a false beard. Another, and much more ingenious one, which has been employed in several enchantment scenes, is that of the sword whose blade enters its hilt, and which is due to Mr. Voisin, the skilful manufacturer of physical apparatus. In its ordinary state this sword has a stiff blade, 80 centimètres in length, which, when looked at from a distance of a few mètres, presents no peculiarity (Fig. 1, D); but when the exhibitor plunges it into his mouth the spectator sees it descend by degrees, and finally so nearly disappear that but a few centimètres of the blade protrude. In reality the blade has entered into the hilt, for it possesses a solid tip that enters the middle part, which is hollow, and these two parts enter into the one that forms the base of the sword. The blade is thus reduced to about 25 centimètres, a half of which length enters the hilt. There then remain but a few centimètres outside the exhibitor's mouth, so that he seems to have swallowed the sword (Fig 1, G and E). This is a very neat trick.—*La Nature.*

Sanitary nspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

PROPAGATION OF DISEASE BY BOOKS.—When preventive medicine is searching out and checking all possible means by which infectious and contagious maladies are spread, the part which books may play in the propagation of disease should not be overlooked. There can be no doubt that the specific contagia of many zymotic disorders, and especially of scarlatina, small-pox, and typhoid fever, in the form of particles of material emanations from the bodies of patients, may attach themselves to the covers and pages of books, and so be carried from the sick to the healthy. In private families all books and periodicals used by a patient during his illness from a zymotic disease had best be burnt upon his convalescence. In general hospitals in which zymotic diseases are treated scrupulous care should be taken that all literature used by patients suffering from contagious and infectious maladies shall be reserved exclusively for use in the special wards devoted to such disorders. We are afraid zymotic diseases are sometime spread by books through the agency of lending-libraries and second-hand book-shops; and it would be well if the literature of such establishments were occasionally subjected to efficient disinfection. Persons recovering from zymotic disease should remember that it is one of their duties to take all care to avoid their infection of the healthy; and they should be taught to refrain from handing to others the books they have used during their illness.—*British Medical Journal.*

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HYGIENE AND THE SCIENCE AND ART DEPARTMENT.—Mr. W. E. Crowther, hon. sec. of the Technical School, Manchester, in a letter to the *Manchester Guardian*, while admitting the necessity for some physiological instruction preceding or concurrent with the teaching of hygiene, expresses his regret that the Lords of the Committee of the Council upon Education have decided that payment shall be made on the results of the examination in this subject of such candidates only as have at the same or at a previous examination passed in the elementary stage of animal physiology. Mr. Crowther points out that medical men whose names appear in the Directory will, on application, be registered as teachers; and as institutions will naturally prefer to have their classes in hygiene and physiology taught by the same person, the effect of the regulation will be to dispossess teachers of physiology of their classes; whereas if the department had allowed teachers of physiology to teach also hygiene under the ordinary regulations as to grant, not only would the former subject thus obtain a very desirable lift into popularity and practical usefulness, but also a very salutary and fair increase of grant would have accrued to a somewhat poorly remunerated class of teachers.

FISH AS A FOOD.—The master of the Brighton Workhouse has reported to the Guardians the results of six weeks' experiment of adopting fish in lieu of meat for dinner once in each week. The result has been most satisfactory. Comparing the cost of diet during the corresponding period of last year, notwithstanding that the daily average of consumers in 1883 was fifty-one more than in 1882, there was a saving of £18. 13s.; and what is rather wonderful, the inmates generally were in favour of the change. The only thing wanting was the certainty of a continuous supply.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON INDIGESTION.

Indigestion; What it is, what it leads to, and a New Method of Treating it. By JOHN B. GILL, M.D., M.R.C.P.E., &c. Third edition. (London: J. & A. Churchill.)

THIS is a book which we think has deservedly run into a third edition. Dr. Gill's key-note is struck in the statement that "*true feeding* consists in taking the *exact amount* of nourishment that can be assimilated without the generation of the poisonous products of indigestion." He tells us in his prefatory note also, that his instructions are to be carried out to the "very letter," and there is sound wisdom in the advice. That persons who live longest are those who "possess faultless digestive organs," is a statement of the author's which will not be gainsaid. Canon Beadon, who died aged 102, in July, 1879, exemplified this latter truth. A patient who speaks as follows is a mournful but all too common example of the indigestion that is due to over-eating and to nutritive excess:—"When I was a young man," says the patient, "I could eat a horse; now, thanks to past indulgence, I have a crib-biter installed in my inside. 'Tis unendurable! A stable, not a stomach, is the appropriate receptacle for a vicious quadruped." Of all the ailments which affect the civilised races of mankind, dyspepsia or indigestion is at once the most common and the most serious. We say most serious, because it is the border or common-land whence well-nigh every other disorder may take origin. Dr. Gill is perfectly right when he tells us the subject of his volume covers the whole domain of medicine, and besides making life at large miserable, induces more social discomfort than any other affection. A chapter on digestion proper affords a plain and popular *résumé* of that process, and information of this nature is necessary for the appreciation of the abnormalities which constitute indigestion. A succeeding chapter gives us no fewer than twenty-five causes of the malady of which the volume treats. Forty symptoms succeed in the fourth chapter, but many of these are, of course, indicative equally of other ailments, although associated with derangement of the stomach's duties. Acute indigestion, where, in popular language, the patient is "colicked" after a meal, is relieved, according to Dr. Gill, by inducing vomiting, and, in the majority of cases, advising extreme care in diet. Sudden exertion after dinner, mental worry, &c., may induce this form of the complaint.

But it is the chronic form of indigestion which appears before us as the serious malady which unfits the patient for the discharge of life's duties; and in the course of his remarks on the foods to be avoided, and those which may be taken by the sufferer, Dr. Gill is always most judicious. His remarks on tea, for example, are worth remembering:—"Tea is, as a rule, most sedulously to be avoided by dyspeptics. Not one in fifty can partake of it without paying a most severe penalty for his indulgence. . . . . Many dyspeptics absolutely refuse to abandon the use of tea. Under such circumstances it behoves the physician to devise means by which the injurious effects of the beverage may be reduced to a minimum. This object is, in my opinion, most easy of attainment by using high-class leaf, and infusing it with *cold* distilled water. The latter being unattainable, I recommend the substitution of rain-

water, boiled, allowed to stand till cold, and then filtered through charcoal or spongy iron. This infusion may be treated as required to the desired temperature. By a recourse to these measures, a considerable amount of flavour is obtainable, yet conjoined with the minimum of astringent principle. It is seldom necessary to allow the water to remain in the tea for a longer period than two hours."

Dealing with the subject of drugs and their use in indigestion, Dr. Gill has an interesting chapter on the action and value of various medicines in this disease. The summary of the diet-treatment given by the author consists in the advice that the food is to be graduated according to the strength of the digestive organs, and is to consist chiefly of vegetables and fruit, to which animal food is to be added in the fluid or semi-fluid condition. The times of eating are to be varied according to the circumstances of the patient—"some stomachs require food to be given at short and others at longer intervals. The drinks are to consist of water, effervescents, fruit-syrups, cocoa, cocoatina, and, perhaps, a tiny modicum of whisky, brandy, or claret very much diluted."

As a plain guide to the dyspeptic, who is willing to be guided at all in the treatment of his malady, we may cordially commend this book to the notice of our readers.

THE CARE OF THE EYES.

How to Use our Eyes, and How to Preserve Them by the Aid of Spectacles. By JOHN BROWNING, F.R.A.S., F.R.M.S., &c. With 37 illustrations. (London: Chatto & Windus.) 1883.

THIS little volume should secure a wide circle of readers. Mr. Browning everywhere endeavours to write plainly and to avoid technicalities, and in these commendable endeavours he is eminently successful. His description of the eye, with which the *brochure* opens, is interesting, and by aid of diagrams, a clear account is given of the apparatus of vision. We have been specially pleased with the many useful hints given by Mr. Browning regarding sight-preservation. The following passage on the use of coloured glasses merits quotation :—

> Coloured glasses are not resorted to nearly so much as they should be. For writing or reading, blue are the best, and some prefer this colour for walking; but generally it will be found that neutral tint or London smoke are the pleasantest, and they are equally beneficial for outdoor use.
>
> Most persons will require only plane and parallel glasses; and here I must caution my readers that such lenses should always be made of optical glass, *coloured all through and worked and polished on both surfaces.* The greater part of the coloured glass spectacles and folders sold are made of white glass, which is coloured only on one side, and not worked at all, but simply fire-polished. Such glasses have many imperfections, as seeds, specks, blebs, or veins, besides unequally-polished places, scratches, and other surface-markings.
>
> Owing to the dark colour of the glass these escape notice when looking at them; but they cannot fail to be prejudicial to the eyesight of those who wear them, who have to look *through* them. Whatever spectacles are worn, whether for short or long sight, for walking or reading, coloured glass or clear, they should be worn well away from the eyes, for two reasons—the eyes should have free play of air over them and be kept cool, and the lenses and frames should be kept well off the eye-lashes. If in the involuntary winking of the eye, which is always going on, and should never be restrained, the lashes touch any part of the spectacles, the eyes will soon become irritated and often inflamed if they are naturally weak.

The most interesting part of Mr. Browning's book, perhaps, is that which relates to the choice of spectacles and to those needs of the eyes which demand their use. A vast number of useful hints are given regarding the use of spectacles, and the remarks on "single eye-glasses" may be commended to those who affect a fashionable craze :—

> Wearing a single eyeglass has happily of late become less common than it used to be, but it should be confined to those who are blind with one eye. I need say nothing respecting the unpleasant expression given to the face caused by the contortion of the features, which is made to keep the eyeglass in position. This is a small evil compared to the injury done to the eyesight by working one eye at the expense of the other.
>
> Those who wear a single eyeglass soon acquire a habit of seeing with the eye only on which it is worn. The vision of the other eye is suppressed; that is, the image which is formed on the retina remains unseen, a convincing proof that people do not see with their eyes, but with their brains. Suppressing the vision of the eye is almost as hurtful as straining the vision. The muscles of the eye that remain unused wither and lose their power, and the sight of the eye is rapidly impaired. Yet even in such cases as this, by the use of proper lenses the sight may be to a great extent regained.

Altogether Mr. Browning's work teems with interest, and deserves perusal from its intrinsic interest, and from the amount of information which may be culled from its pages regarding the physiology of seeing.

The Money Question Considered. (London: E. W. Allen, 4, Ave Maria-lane, E.C.) Price 1d.

THIS little pamphlet deals with a highly-interesting topic. It is well written, and maintains that the basis of national money is national wealth (and not gold), "which should be paid for by notes expressing the amount of the Government's indebtedness." The author argues closely, and although his views are startling, they merit the attention of all interested in the national welfare.

FLIES IN THE HUMAN BODY.—Dr. Voelkel, of Berleburg, in Westphalia, was consulted on Feb. 21, 1882, on the case of a lad, aged 13, who complained of stiff-neck and severe pains on the right side of the neck and head. On the 27th his father reported that he was much better, a "worm" having been emitted from the skin below the right eye. The cylindrical larva was about 1½ centimètres in length, and 2 millimètres in diameter, and moved actively for the space of half-an-hour. Two other "worms" had been evacuated, but had not been preserved. The patient, on March 12, presented himself with a hard white nodule about the size of a pin's head on the right cheek. This was not accompanied by inflammatory redness. The patient's brother stated that this had commenced with a small patch of redness of the skin, with tenderness to touch; that a small opening appeared, from which a few drops of watery fluid had escaped, and the larva was to be seen. By gentle pressure it was easily dislodged. On the day following another was removed. Some pain and tenderness remained for eight days after the removal of the parasite, and gradually subsided, the general health continuing unimpaired. The boy remembered having slept in the open air frequently in the preceding summer, and having suffered from the stings of insets. It is remarkable that these parasites should have remained under a healthy skin without causing eruption or wound of any kind. Dr. Voelkel submitted the larvæ to the opinion of Professor Brauer, of Vienna, with the result that Dr. Brauer entertained not the slightest doubt that the parasite was the larvæ of the *Œstrus homonis*—the larva of the gadfly. Larvæ of insects of the same order "Œstridæ" are well known by their effects on man in tropical America.

Sanitary Appliances, Etc.

Warmth and Lightness.— There can be no question that, as regards clothing, the essential idea of the reformer consists in the attempt to unite lightness of texture with warmth. This remark applies to the coverings which invest us during sleep, as well as to our bodily garments. Many a case of "unrefreshing sleep" arises from the fatigue which a mass of heavy bedclothes entails upon the sleeper. There can be no doubt, therefore, that the invention of the "down quilt," with its light, airy substance, and its thorough power of conserving the body's heat, must be regarded as a boon to health. Messrs. Newham & Co., of Boston, Lincolnshire, have forwarded to us a pattern of the down quilts manufactured by them. The "quilts" made by this firm are produced in two qualities —one in washable chintz and the other in washable sateen. The patterns we have seen are highly artistic in appearance, and, from an æsthetic point of view, constitute a pretty room-decoration. An examination of the feathers used in the manufacture of these "quilts" shows that they have been subjected to a thorough process of purification—this item being of the utmost importance in ensuring the wear of the quilt. Medical authority is unanimous in recommending coverings of this kind, for infants especially. The injury done to young children, the ill-effects of the interruption to breathing, and the evil of over-heating produced by the weight of heavy clothes, are so marked that in the well-regulated nursery, as well as for the ordinary bedroom, the down-quilt has become a stable institution. The prices of the quilts are extremely moderate, and from the large demand for these health-giving coverings, we are glad to note that Messrs. Newham are enabled to offer the quilts and other articles to the public on exceedingly favourable terms. We recommend those who desire warmth with ease and comfort to give these quilts a trial; and a final remark must not be omitted to the effect that they are equally useful in winter as an addendum to, and saving of, the ordinary "wraps," and in summer, when the quilt alone, forms a sufficient protection against the coolness of the night air.

Dollond's New Clinical Thermometer.—In an early number of Health we shall publish an article on the uses of the Clinical Thermometer in the Family Circle. Due mention will then be made of the extreme value of this little instrument in the mother's hands, in satisfying herself of the health of her children and others. The use of the instrument is simple in the extreme, and, as an indicator of the existence of fevers and other affections, its value is unsurpassed. Meanwhile, we would desire to call the attention of our readers to the Clinical Thermometer made by Mr. Dollond, of 1, Ludgate-hill, London, E.C. This little instrument, contained in a neat tubular case, is made in two sizes, 4 in. and 6 in. respectively. The price (7s. 6d.) is extremely moderate, and as the thermometer possesses a magnifying and indestructible "index," its use in the home is rendered perfectly easy. The importance of this little instrument in detecting the advent of disease cannot be over-estimated, and its increasing sale indicates that (as shown in the notice of "Medical Maxims," Health, No. 26, p. 11) its application and use are being duly appreciated by the heads of families, who regard the early indications of disease and their arrest by treatment, as preferable to prolonged attempts at cure.

American Breakfast Cereals.—It has often been remarked that of all the meals which fashion has established in our midst, breakfast is that which has been least subject to modification and improvement. The familiar phrase "chop, fish, steak, ham-and-eggs, sir?" of the British waiter is proverbial in its monotony, and the mind of the aspirant after "fresh fields and pastures new," in the way of a dietary, naturally views with eagerness the prospect of an addition to its fare. "The American Breakfast Cereals" have provided us with a number of vegetable foods which bid fair, from their palatable nature, to rank as substitutes for porridge and other dishes now in favour. Their white wheat, maize, oatmeal, and barley food are all agreeable foods, and when properly cooked—a matter of great ease, speed, and simplicity—form nutritious dishes for breakfast and for other meals. The cost is trifling, and the purity of these cereals is assured.

Megilp, Magilp, Megellup (the name is spelled in many other ways) is a mixture of pale linseed-oil and mastic varnish, employed by artists as a vehicle for their colours. The proportions vary, according to the work. It is thinned with oil of turpentine.

Our Letter Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

ELECTRO-DENTISTRY.

Sir,—In reference to the remarks of Mr. W. Lant Carpenter, B.A., in your issue of Oct. 19, upon electric appliances for the mouth, as suggested by Dr. Wedgwood, my own experience of similar appliances may be of some interest to your readers. In the year 1873 I was consulted by the late Dr. ——, himself at that time a medical electrician, and in extensive general practice, regarding the practicability of constructing an artificial denture that would convey a current of electricity to the jaws and salivary glands, as he thought such an arrangement would be of use in the treatment of neuralgia, as well as of service in stimulating the flow of the oral secretions into the mouth, and so promoting digestion; for he himself suffered from dyspepsia and a lack of salivary secretion in the mouth. At his suggestion I made him an upper vulcanite denture, on the palatal side of which I introduced a series of small metallic elements arranged alternately in pairs as for tension, and upon which the saliva was to act as the exciting fluid.

The elements were exposed on the palatal surface, and came in contact with the palate. This denture, so arranged, was worn for a long time, and was so far successful that the doctor assured me the flow of saliva was thereby increased. This electro-denture, when properly arranged and placed in slightly acidulated water, would influence the magnetic needle of a galvanometer.

About the same time I made two or three other cases for different patients which produced no perceptible influence after the first few days. Therefore the question arises as to whether the effect produced in the first case was due to an electric current or to the presence of a foreign body in the mouth, or to both of these; for we know that the presence in the mouth of a small piece of metal, such as a coin, will, in the majority of cases, produce a rapid and increased flow of saliva. But another case appears on the surface to be more conclusive. This was that of a patient who was at the time manager of some West-end public baths, and was engaged for many hours of the day in a cold office at the entrance to the building, and suffered severely from neuralgic pains in the jaws and in the regions of the eyes. For this patient I constructed an upper and lower denture, with metallic elements arranged, as in the first case, in both of the plates. After giving these dentures a fair trial, my patient assured me that he felt relief, and on this account asked my permission to wear the plates at night, which I had previously strictly forbidden him to do.

Now, the question arises here again, as to how far this relief was due to any physiological or pathological conditions which might have been produced by the electric current, and how far to the "influence of mind over body," arising from the knowledge of a novel and supposed remedy being at work. I may have some opportunities of testing the electromotive force and strength of current of this minute battery whilst *in the mouth*, and shall then be better able to judge. But that a current of electricity may be produced by a very minute battery is evidenced by the following extract from a newspaper:—"Mr. Collett writes from Hearts' Content, 'I have just sent my compliments to Dr. Gould, of Cambridge, who is in Valentia, with a battery composed of a gun-cap, with a strip of zinc, excited by a drop of water, the simple bulk of a tear!'"

My own impression is that such arrangements as these are of little practical value, except in cases wherein the saliva is of a decidedly acid reaction, as, for instance, in some of the severer forms of dyspepsia.—I am, sir, yours very truly,

C. J. Boyd Wallis,
23, Brook-street, Grosvenor-square. L.D.S., R.C.S Lond., &c.
Author of "Electricity and the Electric Light, in reference to Dentistry and Surgery."

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

TOLLEMACHE.—See HEALTH, No. 20.

ANDREW CARR.—About 20 per cent., we believe; not more.

BERTHA.—Apply to the inventor.

CARGILL K.—The opinion is neither correct nor judicious. There is no question of liability.

OKEN.—Goethe appears to have propounded a skull theory at the same time. See Owen's works.

P. H. M.—Address your inquiry to the Secretary of the Pharmaceutical Society, Bloomsbury-square, London, or 119, George-street, Edinburgh.

ARTHUR P. HUNT.—You will find Pasteur's paper, read at the International Medical Congress, reported in the *Lancet* or *British Medical Journal* of the date of the Congress meeting. Look up the file or index of either journal at the office.

SANITARY.

B. GEORGE.—In our opinion, the drain is at the bottom of all the mischief. See to it: do away with the faulty trap and substitute a "Banner's" closet-pan, or a Jennings' "Wash-out" for the old pan.

THETA.—Hinckes Bird's plan was duly noticed in a recent number of HEALTH in "Notes by the Way."

C. ORME.—See "Notes by the Way," of present number, for a reference to trichina disease.

A. G. O.—Try "Sanitas Fluid." It has acted in our hands with success in a similar case.

B. ULPHO.—The fumes of a brickwork are noxious and unpleasant, and are, in our opinion, objectionable to health.

B. ASHWIN.—Bailey's Sulphur Pastilles for fumigation may be had from that firm at Wolverhampton, or 2 and 3, Abchurch-yard, Cannon-street, London, E.C.

MEDICAL.

L. F. CLOW.—Sorry we misunderstood your last. Any druggist will make you a solution of carbolic acid of the strength of 5 per cent. as you wish. The acid is daily used in solutions prepared by druggists, both in oil and water. Glad to give any further directions, if need be.

D. G.—You were duly replied to in page 46, No. 28, of HEALTH. If you had read the notices to correspondents you would have found that, owing to the immense number of queries we receive, no letter can be replied to in the same week as that in which it is received. Send us the exact name and address, please, of the practitioner you inquire about, and we will reply to you in this place. We have already said the inhalation treatment is, as a principle, a safe one.

H. LANDER.—We cannot say from your description of the case whether the patient suffers from apoplexy or not. Describe the fits, appearance, &c., more fully.

MERSEY.—Yours is a perfectly common case. You have run the gauntlet of the quacks, and, as usual, have discovered their pretensions are—in a word—lies. Don't be anxious about yourself. Take a teaspoonful of Fellows' "Syrup of the Hypophosphites" in a wineglassful of water thrice daily, half an hour or so before meals; sleep on a hard mattress; use cold sponging each morning; let your food be light and nutritious; take moderate exercise in the open air; and, above all, be cheerful. You will in a little time get perfectly well. You have no actual disease.

RIMINTON.—Will you kindly read our Notices to Correspondents? See reply also to "D. G." above. You were duly replied to in No. 28 of HEALTH. All queries are duly answered in the order of their receipt. By noting what is plainly said regarding the impossibility of giving answers at once, you will save yourself (and us) inconvenience.

A. W. G.—Send all such pamphlets to your detective police, and, if possible, hand over those who distribute them to the police. Mr. Raffles gave the quacks a lesson a few weeks ago.

W. N. W.—See (and follow) advice to "Mersey" above.

GALLED.—We fancy you would improve on a less stimulating dietary. Give up all stimulants for a time, and use a little plain Vaseline as an ointment. No connection with sweat-ducts; simply a tender condition of skin which has become almost chronic, and which care in avoiding any stimulation will check. Dust a little "fuller's earth" on the parts occasionally. If the irritation continues, protect the surface with boracic lint as a dressing.

MUSICIAN.—1. See to your boots being loose, and avoid any compression of ankles. Wash the feet frequently, and attend to the condition of your socks. 2. Read Dr. Holmes on "Voice Production" (Chatto & Windus). You are straining your voice by your own account. 3. Yes; we believe in the efficacy of the system.

ALARMED has no need to be so. Use cold sponging, and avoid all stimulants for a time. Drink potash water, and rest as much as possible. The symptoms will disappear in time.

JUNO.—The New Zealand life would certainly be a healthy one. Try the effect of a little Morson's "Pepsine" with your food; eat slowly, and be regular in your habits. Avoid tea and coffee for a time.

BLACK BESS.—So far as we can judge from your letter, you are simply low in your general health. We should recommend you to try a complete change of scene and air for a time. Live well, but moderately; no stimulants; cold sponging, if suitable; a little Morson's "Pepsine" with food, and the tonic recommended above to "Mersey." The medicine advertised is a quack production.

W. A.—Use a little plain Vaseline as an application, and, with care, the difficulty will be avoided.

G. E. L.—You are not in bad health, you are only a little low. Take the tonic recommended to "Mersey" in present number, and look to your food and habits generally. The "hair" symptoms only indicate a lowness of your system.

T. H. P.—Wear a flannel or chamois chest-protector, and clothe warmly. Buy one which protects front and back as well. Attend also carefully to general warmth, avoiding cold or damp.

A. W. G.—1. Difficult to say. Probably some individual peculiarity, which only an examination of the larynx would reveal. 2. No, unless development is arrested. 3. "Healthy Dwellings," by Galton (Macmillan).

DÉLICATESSE.—We know nothing of either of the preparations you name; but the "Elixir" is a production of a kind we cannot conscientiously commend, seeing its source and its much "puffed" character. We sympathise deeply with you, and can well understand your anxiety. There is no cure in an advanced stage. Have your physicians never recommended a change to Davos Platz or other resort? Possibly the case is too advanced; but the treatment of phthisis at high altitudes is very beneficial in suitable cases. "Fellows'" Syrup is highly recommended for checking the profuse sweating and as a general tonic. Glad to be of any further service. The inhalation treatment often does good; but all depends on the stage of the disease.

I. MACMICHAEL.—Why not attend or join a good gymnasium? Such a place is the only one we know of where variety of physical exercise can be had or attained. For the dyspepsia, try "Pepsine" with the food. We have seen great good in such cases as yours by the use, for a time, of concentrated foods, such as the preparations of Brand & Co., Little Stanhope-street, Mayfair, W. These foods (Beef Essence, &c.), are easily assimilated, and give the stomach and its mucous membrane rest. This system is worthy a trial if you suffer much; as you may, without limiting your nourishment, give your digestive system needful repose. We can send you address of a reliable physician on receipt of stamped addressed envelope.

LIBER.—See advice to "Mersey" in present number of HEALTH. Glad to advise again, if necessary.

L. M.—Yes. Decided harm from the use of cold water. Tepid or warm water might, however, be safely used. Leave off all cold baths for the time being. There are a number of absurd superstitions extant regarding the necessity of abstaining from the use of even tepid or warm water.

VERITAS.—You do not mention any particulars regarding your general health. The first may be a symptom of some ailment or other. Meanwhile, attend to the health carefully, and try a little "Æsculap" mineral water each morning as a mild aperient.

THROAT.—Depends on the cause of the sore throat. If a simple relaxed throat, try a guaiacum lozenge occasionally. A gargle made by adding a drachm of tincture of capsicum to half-a-pint of water, and used 3 or 4 times daily.

CHRONOS.—1. See advice to "Throat" above. 2. Try 15 grains Dover's Powder with a hot bath at bed-time, to induce free perspiration, and avoid exposure next day. 3. Bathe the eyes with a lotion made by dissolving 6 grains of alum in an ounce of distilled water, and smear the lids at night with pure Vaseline. The tonic recommended to "Mersey" above should do you good as a general stimulant.

F. W. G.—We fancy you are brooding too much over your ailments. Try the tonic recommended to "Mersey" in present number of HEALTH. This will probably cure your symptoms. Write again, if not improved.

SANCHO PANZA.—You certainly do not suffer from the affection you name, judging from your description. We think you must live more generously. Take fifteen drops of "Fer Bravais" or Wyeth's "Dialysed Iron," in a little water thrice daily. This will probably relieve you.

OLIVE.—A case like yours will only benefit when you have tried—firstly, a change to the sea-side, and, secondly, from the use of cod-liver oil, to which syrup of the iodide of iron has been added. You are constitutionally weak, and require constitutional treatment.

EXPRESS.—1. The habit is weakening, and if persisted in leads to great weakness and debility. See advice to "Mersey" in present number of HEALTH. 2. Yes; Dr. Pratt's book should be consulted.

TELEGRAPH.—See advice to "Mersey" above. Don't believe the quacks, whose interest it is to alarm and deceive the unwary.

HOPEFUL.—Take more outdoor exercise, and don't try double work, as you seem to be doing. Take a little "Pepsine" with your food, and a teaspoonful of Fellows' "Syrup of the Hypophosphites" twice daily before food. Try also "Æsculap" or "Friedericshall Water" as a mild aperient. Attend to your teeth.

ROB ROY.—See advice to "Mersey" in present No. of HEALTH. You must not be nervous or over-anxious. Food to be light and nourishing—eggs, milk, puddings, &c. No stimulants.

THE LIZARD.—The medical opinion is probably correct. The symptoms resemble those of gravel, but only a personal examination by a physician can decide exactly your state. We should feel inclined to see what effect the iron-tonic prescribed to "Sancho Panza" in present No. would have. Try this, and report the effect, when we shall be glad to advise further.

W. P. W.—You are generally "out of sorts." We should recommend you to take "Æsculap" water for a time each morning as a mild and safe aperient, and to make a change in your food, giving prominence to a vegetable dietary. Leave off coffee and tea. Give up the turpentine—you do not require it. Apply plain Vaseline to the affected part, and for the pains try hot salt water baths. Write again, if not improved.

OMICRON.—The person you name is a qualified medical man. We know nothing of his treatment, but if you will send us a stamped addressed envelope, we will put you in the way of getting a thoroughly sound medical opinion. We have no confidence in the professions of "advertising" doctors.

A MOTHER.—Such a case as you name is somewhat uncommon, and may proceed from some deficiency of structure or from some abnormality of function. We should, in such a case, recommend a consultation with a good physician, who alone can determine the exact cause of the symptoms you name. If you wish it, we can send you privately (on receipt of a stamped addressed envelope) the name of a physician accustomed to deal with such cases. We do not think there can be any inward growth. We shall be glad to advise you further.

JACKSTAL.—1. Take "Æsculap" water in the morning, and give up smoking at night. The tongue is merely an indicator of digestive disturbance. 2. Put a little glycerine into the ear at night, and plug the ear with cotton-wool. This will soften the wax; then syringe.

EPSILON.—1. There is no sure method of destroying superfluous hairs, save by electricity, and this can only be applied by a specialist in skin diseases. 2. The tooth-wash you name will do no harm; but it is entirely useless as a means of keeping the teeth clean. Only a powder can do this.

NENA.—We shall publish illustrated "Ambulance Lectures" shortly, by various hospital surgeons and others. Our space is limited, and we require time to develop all our projects. Thanks for your kind suggestion.

FRED. W. C.—1. Glad to hear our advice benefited you. You must not take the tonic continuously. Leave it off when well, and then try to discover the mode of life, food, &c., which best accord with health. 2. The toilet-preparations are, as a rule, well known. We note your suggestion as to their uses. 3. Regarding this matter, we are sorry you have not benefited; but your strictures are somewhat unfair. In our own case, we tested the system, and with marked benefit to ourselves. You do not allow for individual differences. No system can suit everyone. As you say your lessons will be of use to you, you have not learned in vain. We know nothing of the system save from personal experience, and we have no connection, direct or indirect, with its founder. We hear continually of cases in which its success has been marked. Thanks for your good wishes.

R. A.—You do not mention the lad's age. If above mere childhood, we fear nothing can be done—unless, if the deformity were very great, he would care to undergo a surgical operation.

DELTA.—The pamphlet is the production of a notorious quack, whose "Restorer" is a sample of the many ways in which the public are deceived and robbed. Have nothing to do with the quack, of whom we may have something particular to tell one day, as to his ignorance and swindling propensities. See advice to "Mersey" in present number. There is no need to be anxious on any account. The Dundee police should be instructed to look out for the vendors of such pamphlets.

S. E.—Take a teaspoonful of Fellows' "Syrup of the Hypophosphites," in a wineglassful of water, thrice daily, before meals for a short time, and see what effect that tonic will have upon you.

XENOPHON.—See advice to "Mersey" in present number. You should take a little "Æsculap" water, as a mild aperient, each morning for a time. If not bettered, we think we can assist you further, if you will write again. In your case, your cure is really a matter of attention to your general health.

K. B. E.—See a good surgeon, and have the patient thoroughly examined. In such a case we should feel inclined to put the patient on cod-liver oil to which syrup of iodide of iron has been added, a tablespoonful to be taken thrice daily. There is some constitutional weakness which requires attention.

NIL DESPERANDUM.—You do not name any evil effects as arising from your condition. We regard your case as depending upon a highly nervous state. Can you give any reason for the "contractions" you speak of?

T. W.—Why not try a purely vegetable dietary for a time? We have seen cases like yours cured by such a change of diet. A little "Æsculap" or "Victoria Ofner Bitter Water" in the morning will assist your cure. Avoid tea and coffee, and take a variety of vegetable dishes, and you will benefit much therefrom.

RECRUIT.—Yours is a case of careful living in the way of food, exercise, &c. You do not give any details. Please write again, stating your mode of life, &c., when we will be glad to advise you.

N. T.—Look up the Index to Vol. I. of HEALTH, now published. If you cannot find therein what you wish, we shall be glad to make search or to furnish you with a *recipe*.

FLEUR D'ORANGE.—Tobacco is slightly sedative in its action. In your case we should advise you to experiment in its discontinuance, and see how you feel after the change. Excessive smoking certainly produces a nervous state.

EXOTIC.—We do not preserve the letters of correspondents, and we cannot charge our memory with your case. But from your present statement we are glad to see you are improved. You need not continue the tonic, but with your meals try a little "Pepsine." The change you contemplate to the South would do you good. Have you tried cold sponging? For the sleeplessness and neuralgia try 15 grains of bromide of potass in a wineglassful of water for a few nights on going to bed.

ALPHA.—1. We know nothing of the association you name; but if you will send us the names of any medical men connected with it, we shall inform you if they are registered practitioners. Personally, we have no faith in such institutions. 2. The gentleman you name is a qualified medical man, that is all we can say. We have no personal knowledge regarding him.

ORION.—1. The "Professor" is a quack. Real "Professors" don't write pamphlets and distribute them in the streets. 2. No; not weakening unless frequent. 3. They are a sign of health if not too frequent. 4. Attend to general health simply, and take a little "Pepsine" with your food, and try cold sponging each morning.

EXPECTATION.—Are you not too much confined indoors? You appear to want open-air exercise, and you should arrange to try this. The head symptoms depend, we fancy, on imperfect digestion. Try a change of diet; eat vegetables and fruits, and let us hear how you progress.

F. C. C.—We suspect there is some affection of the ear-drum. Moisten the ear-cavity with a little glycerine at night, and plug the ear thereafter with cotton. This may tend to remove any wax which may exist in the ear. Have you ever suffered from scarlet fever, or from any ear discharges? If your affection continues, you must consult a professed aural surgeon.

D. F. K.—If we mistake not, we advised you before that the case was one for a surgeon's opinion. See what the surgeons at the Western Infirmary think. Possibly a simple operation might put the toe right. It seems to resist all treatment otherwise. The spine trouble is only an indication of constitutional weakness.

IDA.—For chilblains, try a liniment of equal parts of soap-liniment and tincture of cantharides. Label "For External Use—Poison." Place the liniment on the chilblains with cotton wool, and allow it to dry thereon. We have an article on "Chilblains in the present number. Guard against cold.

ARCADIA.—Try the following:—Dilute sulphuric acid one drachm; syrup of orange-peel, six drachms; water, seven and a-half ounces. Half a wine-glassful thrice daily. Let us hear the result. Cold sponging might do you good.

RAMORNIE.—Try the effect of a little Morson's "Pepsine," taken along with your food. The tonic recommended to "S. E." in present number of HEALTH should also be tried. The discharge is of no consequence. It is only an indication of your system being a little low. Glad to advise further if necessary.

W. R. P.—Try a vegetable dietary for a time, as a means of lessening the tendency you name, and rub with a sponge a little of Rowlands' Macassar Oil, night and morning, into the roots of the hair. The head may be washed once a week with tepid rain-water,

to which a little bicarbonate of soda has been added. Give this a trial, and write again if not improved. Use a soft brush.

ALICE TREVOR.—Take the tonic recommended in the reply to "S. E." in the present number of HEALTH. This will do you good. You suffer from nervous weakness, dependent on your system being a little under the normal.

J. JOSEPH.—We still think you should give the "Pepsine" a trial, and see that your digestion is well regulated. For the constipation, take a little "Æsculap" mineral water each morning. Glad to advise again, if need be.

W. S. M.—See advice to "Ramornie" in present number as to "Pepsine" taken along with food; and to "J. Joseph," above, regarding the use of a mineral water each morning as a mild aperient.

CYMRO.—You should have given the tonic a longer trial. You cannot expect your symptoms to disappear in a day or so. Continue the tonic for a time, and see advice to "Mersey" in present number. Cold sponging should do you much good also. Your letter is replied to in its order. Sorry if this reply reaches you somewhat late.

A. N.—1. Thanks for your interesting extract. 2. Look up the *Times* file for the article on the sewing-machine "Motor." 3. Never heard of the "Golden Seal" (?). Sounds like a quack name. Try Condy's Fluid (one to ten or fifteen of water).

P. R. ASHWIN.—You seem to suffer from a severe form of skin-disorder. The treatment we should recommend consists in attention to the general health, nutritious food, cod-liver oil especially to be taken thrice daily, and the tonic recommended to "Mersey" in present number of HEALTH. Try a lotion for the sores consisting of one drachm bicarbonate of soda added to one and a half ounces of glycerine. If not improved under this advice, write again.

KOLA KOLA KOLA KOLA KOLA

KOLA.

What is Kola Nut? Certain CURE for DIPSOMANIA. Will sober a drunken man in half-an-hour. Alcohol will not make you drunk if you eat KOLA. If persevered with removes the craving for strong drink, enables its partaker to undergo long fast and fatigue. Is an appetiser, a tonic, good for all, at any time. See leading article on this wonderful plant in "The Daily Telegraph," Aug. 24th, 1883.

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, NOVEMBER 9*, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE *People*, of date Nov. 4, is responsible for the following paragraph, descriptive of the remarks of Dr. Cantlie, of Charing-cross Hospital, at a lecture on "First Aid to the Injured," delivered at the Birkbeck Institution on Saturday night last. The lecturer's "technical explanations of the structure of the body were illustrated by reference to diagrams, which, as he explained, he had brought in preference to an actual human skeleton, the production of which before young men was sometimes attended by unpleasant consequences. On a recent exhibition of the skeleton to a class of volunteers, for example, no less than four of the men had fainted at the sight of it."

* * *

IF these remarks be correctly reported, we can only suppose that Dr. Cantlie's experiences as a popular lecturer are of somewhat rare and singular kind. In the course of many years' experience of popular audiences, eagerly interested in the details of human anatomy and physiology, we have invariably used an articulated skeleton, as well as the detached and separate bones in illustration of our remarks. Not only have we never witnessed any untoward effects on our audience from the exhibition of such objects, but we have, contrariwise, everywhere seen an exhibition of the liveliest (and we would add, the healthiest) interest in the practical demonstrations which were thus afforded. Remembering also, that our audiences consisted (and are still composed as we write) of persons of both sexes, old and young, the case of the four galiant volunteers who fainted at the sight of a skeleton, grows more and more inexplicable. Did these young men never walk through even a natural history museum, where skeletons of animals are exposed to view for purposes of instruction? and if so, did they faint away at the sight of a monkey's bony framework, which, in all essential respects, is the close counterpart of humanity's skeleton? Again, we might ask in wonderment, how such an exhibition of morbid silliness is compatible with the professional ardour of volunteers? In these days, when schoolboys and schoolgirls are being taught the truths of physiology by practical demonstration on the skeleton, &c., the conduct of the volunteers mentioned by Dr. Cantlie, is, to say the least of it, highly remarkable.

* * *

THERE is another point of view which Dr. Cantlie should not neglect to make a note of. We do not know what the ambulance class at the Birkbeck is taught, but this we make bold to affirm, that no lectures on "what to do in emergencies" can be thoroughly serviceable which are not practically illustrated. No one can be taught, for instance, how to treat a fractured bone, without seeing the bones as they exist in the skeleton, and without having an opportunity of studying their shape and relations to one another. No amount of pictorial illustration can ever replace the demonstrations of object-teaching, and of ambulance lectures above all else this holds singularly true. Persons who faint at the sight of a skeleton, are not likely to be of the slightest service to their fellow men who require their aid in any sudden emergency of life. We strongly advise Dr. Cantlie to produce his skeletons and other teaching apparatus, and to allow the "weak brethren" who faint to go home to the repose they evidently require.

* * *

THE newspapers recently recorded the death of an infant in London from being pitched out of a perambulator which had come in contact with a brewer's dray as that vehicle rounded the corner of a street. This case was one of pure accident, no doubt; but the mention of the "perambulator" leads us to remark that the vehicle thus designated, unwisely used, is often the source of serious complaints and ailments amongst young children. A careless nurse may frequently be seen driving a perambulator in which the little occupant lies fast asleep, exposed to the influence of chill and cold. The warmth of children who are sent out in perambulators, in winter especially, deserves to be well looked to; and it may be added that there are not a few cases in which, for the safety and health of children, the perambulator might well be discarded during the entire winter. The warmth and comfort of a child are not readily ascertained as it sits in its carriage. Adults are not fond of riding in open vehicles in cold weather, and it seems worse than foolish to expose children, as is often done, to chill and cold in the perambulator.

* * *

SIR JAMES PAGET, speaking of recreation, defined true amusement as consisting largely in variation of employment. The mental worker should seek manual labour; and the toiler who uses muscles all day, should seek his recreation in some light mental occupation. It is this principle of alternating our occupations, which lies at the root of success in amusing ourselves. Were such a principle more widely recognised, we should hear less of unsatisfied lives and unhealthy existences. The place of gymnastic exercises and physical exercises at large, in education, is more than justified when we reflect on the truth of Sir James Paget's remarks.

* * *

WHAT the *Lancet* rightly calls "a ghastly overture," seems to be a tolerably common practice in London and elsewhere. The "overture" in question consisted in the offer (by circular) of an undertaker to give medical men a commission on funerals. We do not for a moment presume that the undertakers intended anything more than to suggest that where the doctors could recommend their firm they should do so. But the request was a highly imperti-

nent one, and represents a form of commercial enterprise which both the public and the medical profession will justly resent. Why does not our contemporary publish the name of the enterprising undertaker? It appears to us that the announcement of the name of the firm which thus caters for trade, would be the most severe punishment that could be awarded it. People would probably avoid a firm which possesses such original ideas in the way of pushing their commodities.

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RECENT experiments on the time required for the digestion of various articles of food present us with details of practical interest. By a series of elaborate investigations, it has been determined by Jessen that raw beef and mutton are digested most quickly, whilst half-boiled beef and raw veal require a longer period. Next follow thoroughly-boiled and half-roasted beef, raw pork, and sour milk. Fresh milk, skimmed milk, and goat's milk take a longer time still; and it would appear that well-roasted meats and boiled milk require the longest periods for their digestion.

\+ \+ \+

SPEAKING of experiments on the digestion of foods reminds us of the famous case of Alexis St. Martin, a young Canadian, on whom Dr. Beaumont experimented with the view of determining the time occupied in the digestion of various articles of food. These experiments will be fully detailed in future papers in HEALTH, in which the process of digestion will be duly described. It may suffice for the present to say that in St. Martin's case, a gun-shot wound in the side had healed in such a manner as to leave an opening which led into the stomach, and which was covered by a flap of skin. By raising the latter, the interior of the stomach could be seen. St. Martin lived to a ripe old age—he died three or four years ago—and Dr. Beaumont was able to make a series of important observations by watching how digestion proceeded in his patient. Even from the misfortunes of humanity, we thus see that much good may occasionally be derived. Cases allied to that of St. Martin in their nature, have been studied since Dr. Beaumont made his observations; and much information has been added to our knowledge of the manner in which the stomach performs its work.

\+ \+ \+

A CURIOUS case of unusual tooth development has been reported. A Hindoo boy, of fourteen, came to hospital with a growth inside his nose. The affection caused pain and annoyance, and led him to seek medical advice. When the growth was removed, it was found to consist of a tooth, resembling an eye-tooth in shape. In such a case the explanation rests on a simple study of unusual tooth-development. Teeth grow from the "gum" (or mucous membrane) and are not related to bones, as is commonly supposed. Through some abnormal development, a tooth-sac had been formed in the lining membrane of the nose, and in this unusual situation the offending body had grown as described.

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Original Essays

"Life is not to live, but to be well."—*Martial.*

COTTAGE HOSPITALS.

THEIR OBJECTS.

BY G. A. GIBSON, M.D., D.Sc., F.R.C.P.E.

FIRST PAPER.

WHEN disease casts its shadow on the abode of the rich, it brings a burden hard to be borne, even with every comfort at hand; but, when it darkens the dwelling of the poor, it is apt to prove a millstone too heavy for the cottager's neck. Every aid in lessening this weight is a boon to the poor man and a gain to the people at large; no apology, therefore, is needed for dealing in HEALTH with any such means of adding to the well-being of our country.

In the large towns general hospitals are to be found where the sufferer may seek relief, but in the country—and it is to the country we mean to address ourselves—there was not, until a short time ago, any place of refuge for those labouring under the ravages of disease. During the last twenty-five years efforts have been made with much success to supply the want by means of small rural hospitals, about which we have to say a few words.

The small beginnings from which most movements have sprung are, as a rule, enshrouded in darkness. It is not otherwise with the commencement of the cottage hospital system. Attempts, vaguely foreshadowing some scheme of the sort, had been made here and there in the first half of our century, but the credit of bringing the village hospital into prominence belongs, without doubt, to Albert Napper, of Cranleigh. In 1859 he opened a small cottage as an hospital, and proved that results, at least as good as those of the large hospitals, could be got in the simple dwelling of the Surrey peasant. Since that date many other writers have strongly urged the claims of cottage hospitals,* and have made their usefulness clear to every reader. In this first paper we shall briefly set forth some of the benefits arising from village hospitals, and in the following numbers of HEALTH we propose to take up their construction, their furnishing, and their management.

The home of the cottager is but rarely suited to the needs of severe illness. The house may be in a bad situation, it may be damp, the rooms may be small, the air close, there may be an entire want of sanitary appliances, in short, in a hundred ways the dwelling may be unfitted for the tending of disease, and the patient would reap untold benefit if taken to the hospital.

Many still fondly believe that a wife, or mother, or sister, is the best nurse for the sick under all circumstances, without regard to her powers in the sick-room. It were well that the people at large should give up this amiable delusion, and come to see that, even with ready tact, a woman requires a special training before she can be looked upon as a nurse. To this we shall again

* If any of our readers are of a mind to enter more fully into the matter than our space will allow of, we would refer them to the following works:—1. "On the Advantages Derivable to the Medical Profession and the Public from Village Hospitals," by Albert Napper; 2. "Cottage Hospitals: Their Objects, Advantages, and Management," by E. J. Waring, M.D.; 3. "Handy-Book of Cottage Hospitals," by Horace Swete, M.D.; 4. "Remarks on the Establishment of Cottage Hospitals," by F. H. Harris; 5. "Cottage Hospitals: General, Fever, and Convalescent: Their Progress, Management, and Work," by Henry C. Burdett.

return in a later number, and in this place need only remark that in this way again the patient will get much good by going into the hospital.

It is without doubt no easy task to nurse an invalid in the home of a labouring man, more especially if there are children to be reared under the same roof. A case of illness that might have been easily checked with proper care, is apt to become more serious than it otherwise might have done, when the attention needed by the invalid has to be divided between the sick person and the little ones. If the patient is the head of a family, the pressure of disease is felt at its worst. Not only is the bread-winner stricken down, so as to be unable to earn the means of support for the household, but the nursing required must be bestowed at the expense of the children. The removal of the sick man to the hospital, therefore, not only gives him the good of such medical treatment as his malady needs, but it also allows the wife and mother to care for her offspring more fully, or even to make a little money wherewith to keep the wolf from the door.

In any part of the country where a cottage hospital has been built the people know that a haven of refuge stands with open portal to receive the sick. They are aware that it is a home-like place, where the sufferer will be greeted with warm welcome, and will be in the midst of surroundings like those at home. The patient personally knows that the highest medical skill of the district will be helped by trained nursing, and aided by proper food to remedy the disease, and so sets foot in the hospital with every confidence in a speedy recovery.

In such ways do village hospitals *directly* confer signal benefits upon the community, by lessening the evils inseparable from disease. But they are, moreover, *indirectly* a source of good to the country round about. The cottage hospital has, we shall suppose, been founded, as most of them have been, by the efforts of the professional men of the district, aided by the good-will and assistance of the wealthy and the well-to-do. They all work together for its welfare, and give their offerings to its support. The ladies visit the sick-rooms, and, by their womanly sympathy and kindly attention, win access to the hearts of the patients. The gentlemen watch over the financial condition and general management of the hospital, and in many ways help the clergymen and medical men in the discharge of their several duties. Thus the cottage hospital becomes a link between the various grades of society, and fosters feelings of respect and esteem by bringing them into contact with each other. It shows that the rich have an interest in the well-being of the people at large, and it brings forward also many acts of heroic endurance and unselfish devotion in the humbler walks of life.

But to all these social gains we may safely add that the advancement of knowledge receives a useful impetus from cottage hospitals. Many cases of surgical disease that would otherwise have to be sent long distances to the large city or town hospitals, can be treated in the country by means of the cottage hospital. Ay, and in some respects, better treated, too; for the scourge of *hospitalism*, about which we shall by-and-bye have something to say, still clings to numbers of the older general hospitals. There are very many diseases, also falling within the physician's province, which can only be properly watched over and cared for with the appliances of an hospital at hand, and which with these advantages prove amenable to the methods employed. With this retention and treatment of such cases come largely increased opportunities of gaining experience to the provincial practitioner. He is enabled to prolong his student days in the midst of a busy life, and to keep himself fully abreast of the strides daily being made by his profession. Nay, more than this, he may, and often does, add to the ever-enlarging store of scientific facts, and thereby bestows a useful gift upon humanity.

The hospital acts as a means of diffusing knowledge by the opportunities which it affords for deliberation in regard to the cases under treatment. Medical men cannot talk over the details of those maladies from which their private patients suffer, except in those grave cases where consultation is deemed necessary. But in the hospital, where they are colleagues, there are daily occasions of examining patients together, the good of which, to one another and to the public, cannot be too highly valued.

Besides, the mutual conferences held in the hospital bring about a good understanding between the medical men of a district, and strengthen the feeling of unity and fellowship which should exist, but which in rural situations is only too apt to become obscured by misconstruction or petty jealousies.

We have said enough to show how useful a cottage hospital may be. Many a poor man, who might have been permanently disabled, whose life might in all likelihood have crept "on a broken wing," has had to thank such an hospital for a return of health and happiness. And since the strength as well as the wealth of a people is largely dependent on its health, the nation owes a debt of gratitude to the system. The mutual good-will produced between different classes of society, that at present seem unfortunately to be ever more widely diverging, is in itself a great good to the people. And, finally, to the medical man the presence of an hospital is a boon which can only be thoroughly grasped by those who have worked in places destitute of such advantages as it confers.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

THIRD PAPER.

People who take too much food and stimulants and too little exercise sometimes become rapidly fat, and it is the custom among some savage races to combine rest and overfeeding, in order to become sufficiently fat to be considered *beauties*. The peculiarity of Kaffir women in this respect has been already alluded to, and Moorish women achieve a similar fatty distinction by eating plenty of fresh dates, and through drinking a liquor prepared from honey, and taking very little exercise. In order to prepare the young Jewesses of Tunis for the matrimonial market, they are kept, from the age of ten, in a small, dark room, and fed on meal and the flesh of young dogs, and in a few months become, what we should consider, unshapely masses of fat. One must have observed in this country that Jewesses, and often the males too, are very fat. This is partly due to racial proclivity, but chiefly to eating too much and taking too little exercise. In married women it is, to a great extent, due to their having large families quickly, and to the confinement and rest this entails. The idea that the obesity of Jews is entirely due to eating much fatty or oily matter cannot nowadays be maintained. The intelligent reader will observe that lack of exercise, combined with the ingestion of large quantities of starch and saccharine, (*i.e.* sugary) matter, is the cause of this rapid formation and accumulation of fat in Moorish Jewesses. Dancel relates the case of a young lady who, in order to maintain her figure, fasted four days in a week, living only on champagne and *marrons glacées;* corpulence very rapidly increased, but by returning to a proper mode of living she regained her form.

Two very important questions in the matter of fat formation and accumulation require answering, and they are—first, in what manner and to what extent do the different food stuffs contribute to the addition of fat to the body? and secondly, whether the fat is formed from the fat contained in the food eaten, or whether it is formed from the hydrocarbons or the albuminous matters taken with the meals? I may at once state that there are still many problems to be solved in connection with the chemistry of digestion, conversion and assimilation of food; but sufficient, however, is known for the present purpose, and it will remain, when we come to the question of treatment, to apply this knowledge judiciously. I have again to mention the names of two German workers, Ewald and Henneberg, who have recently made observations of moment in this matter, and I cannot but deeply regret that I am unable to quote any recent British chemists as having made discoveries in this important subject of the effect of various nutritive materials on the system. This apparent lack of interest in the matter is largely due to two circumstances—the one is, that pure science is merely its own reward in these islands; and the other is due to the vexatious restrictions on experimental inquiry which of late years have almost killed English physiology; but let us hope that with the teaching of natural science in our schools and colleges, and with the spread of scientific education, and also with the good done by the circulation of a journal like HEALTH, a sounder state of matters will hereafter prevail.

The origin of fat in the human body is one of the most difficult and most controverted questions in the physiology of nutrition; and the part that the three principal groups of simple alimentary substances—the fats, the hydrocarbons, and the albuminoids—play in the production of fat is far from clearly understood. It has long been granted that our fat may be formed from the fat, whether animal or vegetable, which is taken with the food; and that animals have the power of transforming various other substances into fat; but the process has not yet been thoroughly elucidated. The old view was that fat which was eaten, helped to make up the fat of our organs and tissues,—even allowing that a part of it became directly oxidised and did not enter into the constitution of the tissues. But the intermediate forms through which fat, pure and simple, or saponified, passes, before it is deposited in the tissues, are not yet made out. In carnivora, *i.e.*, dogs, cats, lions, tigers, &c., the food eaten suffices to keep up the supply of fat found in these animals; but in herbivora, *i.e.*, cows, sheep, &c.—and even in carnivora when fattening—it is not so; therefore, in them fat must be formed from one or both of the two remaining groups of alimentary substances.

SANITARY GOSSIP.

By Dr. Thomas J. Hutchinson, F.R.G.S.I.

(*Corr. Mem. of Anthropological Society at Florence, &c., &c.*)

"An I prate of things here and there,
'Tis only *Gossip*."

KING DIRT.

It was, no doubt, a pretty æsthetic idea for Lord Palmerston to have defined Dirt as "matter in a wrong place"; but with people accustomed to call a spade a spade, no name can be given to him but Dirt. Moreover, he is always in a wrong place, and can only be described in reference to his mission as the natural and relentless enemy to progress and civilisation, the cruellest of cruel tyrants against the good-health, comfort, well-being, and happiness of the whole human race. Let him be floating in the air you breathe, dissolved in the water you drink, suspended in and incorporated with the food you eat—he is the same. Meet him offending your senses of sight and smell, as you take your daily walk—where often he is revelling in the badly-drained conduits, in the foul sewers, in the fouler atmosphere of your crowded habitations—and you will find King Dirt everywhere, the parent, creator, and fosterer of your typhoids, choleras, fevers, dysenteries, and of all kinds of epidemic disease, be they contagious or not. "The great sanitary law," said Dr. Playfair, "is wash and be clean, and anything which stood in the way of observance of that law impaired the health of all communities." In the old mythological period there was but one set of Augæan stables, whereas now we find them located in almost every region of the globe; yet rarely do we find even the shadow of a Hercules to drive other rivers like the Peneus and Alpheus through them, and so they exist to counteract the law laid down by Dr. Playfair. How is it, we may ask, that no apostle or knight errant has ever come forward to buckle on a crusade against King Dirt? We have had, since the world began, champions, preachers, lecturers, reformers, agitators, revolutionists, orators, and still have them in thousands. *For* Magna Charta, *against* negro slavery, *for* total abstinence from intoxicating drinks, in favour of corn laws, vote by ballot, and land laws, against income-tax, window-tax, and scores of like things; but no single great warrior to oppose the greatest slavery of all ages and countries, the slavery of King Dirt. Now and then we have had strong efforts made by Chadwick, Southwood, Smith, Wilson, and others, but somehow the nation, or the people, or the government did not join with them, and so their flags did not flutter on to victory as yet, though we hope it is now getting a little *Excelsior*.

Often I wonder do people believe that King Dirt, with his satellites in the forms of foul air, bad drains, corrupt smells, and filth in every shape or form, has slaughtered more of mankind in the different plagues, pestilences, leprous diseases, yellow fevers, black sicknesses, choleras, and other epidemics, than were killed by all the wars that have been fought from the earliest ages till now? Look at the mass of evidence to be seen in "Haydn's Book of Dates," from the pestilence in Palestine, that in 1017 B.C. destroyed 70,000 persons in three days, down to this year's work at Dametta and other parts of Egypt. For it is proved by Dr. Schaffey Bey, as well as by Dr. Hunter, that the cholera was *not* imported from India, but was manufactured by King Dirt in his own laboratories on the spot. Yet we see M. Pasteur sending out a mission from Paris, the Emperor of Germany despatching another from Berlin, Dr. Domingo Irieze at Rio Janeiro, and more eminent scientists elsewhere, investigating the germ theory about *Bacilli*, *Cryptococci*, and such infusorial atoms. Very good! But in London, not far from Camden-town and Hampstead, only a few weeks ago, and at Paris whilst I am writing this, we know how King Dirt is snapping his fingers at the industry of the microscope and the test-tube. For he will play his little game, so long as he has material to work on. So he will go forward till he is driven from his strongholds and fortresses—the cesspools, the bad

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drains, the foul sewers, the close rooms; the tenements into which a breath of air never enters, the damp cellars wherein poisonous gases are daily eliminated. So long as he is allowed to prosper by feeding upon putrid garbage, reeking filth, and animal corruption, he will laugh at all the germ theories in the world. With unerring finger he can point out that the germs inherit life and activity of existence from the very same materials that are the daily creation of his maladies, or rather the maladies manipulated by him for mankind. He knows that from these resources, for one who dies of cholera in the worst years, two die every year of typhoid and other *preventable* diseases that are manufactured in his workshops.

Then out with your artillery and proclaim war to the death against King Dirt! Pour into his stronghold and fortresses such weapons of ordnance as 1, pure air; 2, pure fresh water; 3, and plenty of dried earth to deodorise all excreta. Then come up with your reserve battalions of 1, lime for whitewash, 2, sulphur pastilles where you desire to destroy the bad air that may have been infected. If you continue this state of siege with unremitting vigour, soon you may hoist your flag and cry out "Down with King Dirt for ever"!

THE DANGER OF THE TRADE IN FALSE HAIR. — Hair has been so illtreated by fashion that its vitality is now seriously impaired. What with the strain and overheating due to the blending of the false with the real, the binding, the crimping, the curling, and the dyeing, a vast number of ladies have prematurely lost all or a great part of this graceful appendage of the human form divine. Hence the unwelcome fashion, adopted per force, of wearing short hair, as preferable to no hair, has gained ground, and we hope that the refreshing effect of the scissors may repair some of the mischief done. At the same time, the demand for false hair has greatly increased, while the supply has diminished to an extent qualified as perfectly alarming by the West-end coiffeurs. Europeans either will not sell their hair or have no longer any hair to sell; and the trade has been compelled to travel farther afield. The actual supply of false hair for the European markets is now for the most part imported, *viâ* Marseilles, from Asia Minor, India, China, and Japan. But the hair imported from these countries is almost invariably black, and fails utterly to harmonise with the auburn and golden tints that so well befit a northern complexion. It has therefore been found necessary to boil the hair in diluted nitric acid to deprive it of its original colour, and it can then be dyed to the tint most in vogue. This operation has, however, been attended with considerable danger to the workmen engaged in this new handicraft. Severe coughs, bronchitis, and other accidents were the natural results of the nitrous vapours escaping from the cauldrons used for boiling the hair. This new danger appears to have been first discovered by Dr. Felix, of Bucharest, and the Roumanian Council of Hygiene has issued a circular to all members of the trade warning them of the danger, and suggesting the necessary precautions. These facts fail to harmonise with the poet's conception that beauty can draw love with a single hair. The demand is for hair by the ton, and it is time to see that in adapting the colour of Eastern hair to Western usages the work should be carried out under proper supervision. We should strongly object to hairdressers indulging in amateur dabbling with dangerous chemicals, especially nitric acid.—*Lancet.*

DR. NICHOLS' PENNY VEGETARIAN COOKERY-BOOK.—Every household should possess this marvel of cheapness. Free for 1½d.—NICHOLS & Co., 23, Oxford-street, London, W.—[ADVT.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

THE MORNING BATH.

THE morning bath holds a well-established place among domestic arrangements. Cold water is usually and properly preferred for this purpose by those who can bear it. Apart from its cleansing property, which is valuable as promoting excretion from the skin, and so relieving deeper excretory organs, especially the kidneys, we can, by means of cold water, apply a degree of cold to the surface of the body which, when suitably regulated, is both salutary and agreeable. Such a shock essentially constitutes a check upon the peripheral blood-vessels, causing their contraction and a concentration of the blood contained in them on the heart and internal organs. Associated with this, and practically inseparable from it, is nervous shock, of which the sensation of cold is the indication. This vascular (or circulatory) repression, however, has its natural and unfailing counterpoise in the reaction by which a healthy heart, stimulated by the temporary and unwonted resistance, redoubles its action to overcome it, and succeeds in flushing anew the surface channels of the circulation. We may thus regard the action of cold in moderation, on the muscle of the heart, as a means of seasonably exercising this most important of our vital organs, and thus of maintaining its tone. It is clear, from the above remarks, that we do not oppose the practice of morning bathing, but rather approve of it. But a caution must accompany every general statement, and this is no exception. There are those whom a cold bath injures, instead of invigorating. The readiest test of benefit is the glow of free surface-circulation, or at least the absence of any decided sense of chill after immersion. Some do not experience this. Among these are the subjects of heart-weakness, arising from whatever cause; it may be consequent on organic disease of the heart, on old gout or rheumatism, or on overwork and underfeeding, in which case it is a part of a general debility. Again, there is in some a tendency to engorgement of one or other deep-seated organ with blood, a kidney, the liver, &c. This is commonly the result of a previous inflammatory attack, or of visceral disease at the time existing. Surface-cold aggravates the congestive tendency. Obviously, therefore, such persons, if they bathe, ought to use tepid water; and, in renal disorders, this method is often advantageous. In slight cases, cold is not injurious if the ablutions be expeditiously gone through, and restricted to periods of summer weather. The aged should avoid cold baths, and commonly do. Infants, if ordinary despatch is used in bathing and in dressing, have no reason to fear them. Their powers of reaction are excellent. We will not say that children suffer seriously from the maternal dread which warms their morning tubful; but they lose somewhat by the want of that salutary exercise of the circulatory organs which we have mentioned. In the absence of actual disease, debility, if present in a decided degree, contraindicates sudden cold affusion. We say decided, because there are lesser degrees of atony (want of tone) which are the better for it. These are not far below the level of health, and retain a fair measure of latent energy capable of development. All persons in health and of average strength may use a cold bath daily, in summer at least. In winter, we have mornings of extreme frost, which try the strongest constitution. Only the strongest are likely to benefit

by a plunge on these occasions. Fortunately, with us they are rather the exception than the rule; and, for the most part, individuals of moderate powers and free from disease may carry the cleanly practice of summer through the winter months. A word on the bath itself. Those who take to it should begin in summer, not winter, and so become gradually accustomed to its lowest temperature. No one should linger over it; three or four minutes are ample. After immersion, the body should be quickly and well dried and rubbed before dressing. Light gymnastic, dumb-bell, or club exercise, may occupy the next few minutes, the clothes being partly on if the weather be cold, and breakfast, or a cup of warm tea or coffee, should shortly follow, to prevent chilling.—*British Medical Journal.*

TEETH.—The Rev. Samuel Croxall, translator of "Æsop's Fables" from the Greek, "died of fever occasioned by the pain he underwent in cutting a new set of teeth at the great age of ninety-three." Edward Progers, aged ninety-six, died, in 1713, "of the anguish of cutting teeth, he having cut four new teeth, and had several ready to cut, which so inflamed his gums that he died thereof." The late Sir George Cornewall Lewis was very sceptical as to people ever living to the age of a hundred; he would, probably, therefore, have pooh-poohed the story of Robert Lyon, of Glasgow, who cut a new set of teeth at the age of a hundred and nine; and still more that of James Hook, of Belfast, who, in the time of Queen Elizabeth, and at the age of a hundred and twelve, "gott a new sett of teeth, w^{ch} has drove out all y^{e} old stumps."

MEASUREMENTS OF THE DEPTH OF SLEEP.—Two of Vierordt's pupils, Mönninghoff and Piesbergen, have made the depth of sleep the subject of an investigation. They worked upon the principal that the depth of sleep is proportional to the strength of the sensory stimulus necessary to awaken the sleeper, that is, to call forth some decisive sign of awakened consciousness. As a sensory stimulus they made use of the auditory sensation produced by dropping a lead ball from a given height. The strength of the stimulus was reckoned, in accordance with some recent investigations of Vierordt, as increasing, not directly as the height, but as the 0·59 power of the height. For a perfectly healthy man, the curve which they give shows that for the first hour the slumber is very light; after 1 hour and 15 minutes the depth of sleep increases rapidly, and reaches its maximum point at 1 hour and 45 minutes; the curve then falls quickly to about 2 hours 15 minutes, and afterwards more gradually. At about 4 hours 30 minutes there is a second small rise which reaches its maximum at 5 hours 30 minutes, after which the curve again gradually approaches the base line until the time of awakening. Experiments made upon persons not perfectly healthy, or after having made some exertion, gave curves of a different form.

MURDOCK'S LIQUID FOOD. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—VAN ABBOTT, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[ADVT.]

The Body and its Structure

"The proper study of mankind is man."—*Pope.*
"What a piece of work is a man!"—*Shakespere.*

NO. XXII.—THE WORK OF THE MUSCLES.

BY A. J. MANSON.

WHEN, as has already been remarked, we examine the muscular system of any animal, we discover that the "muscles" of which it is composed are arranged in groups or series, and are frequently combined in the performance of the varied actions of the body—as, for example, in the bending or extending of the fingers. But conversely, each "muscle" is found to have its appointed work or duty. As we have seen, only one end of a muscle moves, the other end being fixed. The extremity which moves is called the *insertion* of the "muscle," and anatomists speak of a muscle being "inserted" into this bone or that. The fixed end of a muscle is its *origin*, and hence this part of a muscle is spoken of as "arising" from a bone. If we look at Fig. I., which represents the superficial layer of the muscles of the fore-arm, we may see the *tendon* (or sinew) of the *biceps* muscle (1) (described in our last paper) passing downwards to be "inserted" into the radius-bone of the fore-arm. It is this end which moves when the fore-arm is bent on the upper arm (as in the act of lifting the hand to the mouth) by the biceps muscle.

Fig. 1.—Superficial Muscles of Fore-arm.

Each muscle, as a rule, ends in a "tendon" or "sinew." The tendons are the glistening white cords, formed of stout fibres, which thus serve to attach the muscles firmly to the bones with which they are connected. The tendon-fibres being stronger than the fibres of the muscle itself, we can readily enough discover the advantage which is gained by nature's device in attaching the muscle to its bone by means of the sinew, in place of utilising the flesh fibres themselves for this purpose. The white tendons of the various muscles (flexors) which bend the fingers are depicted in Fig. 1, where the sinews are seen (5, 6, 7) passing downwards to be attached to the fingers. In Fig. 2—which shows the *diaphragm*, or *midriff* (viewed from the front, and showing its upper or chest side), the great muscle forming the floor of the chest, and acting as the chief agent in "inspiration" or taking in a breath—the central tendon of the muscle is shown at 3, whilst another tendon is figured at 10.

The upper muscles of the palmar or front surface of the fore-arm (shown in Fig. 1) afford a good idea of the general relations of muscles to each other. Above (1) the end of *biceps* of the upper arm is seen; whilst another muscle (called the *brachialis anticus*) is shown at 2. The latter muscle protects the elbow-joint, and assists in bending the

SNELGROVE'S GOVERNOR GAS BURNERS.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[ADVT.]

fore-arm on the upper arm. At 3 is seen part of the *triceps* (or "three-headed") muscle, which extends the fore-arm just as the biceps bends it. Each muscle is thus seen to perform one duty only, as it were. At 4, a *pronator* muscle is depicted. It is the duty of this latter to assist in "turning the wrist," as when we turn the palm of the hand backwards. A "flexor," or tendon of the wrist, is seen at 5; and the *palmaris longus* muscle (6) tightens the stout membrane of the palm (9), and bends the wrist and fore-arm also. At 7, we see part of a muscle which bends the second joints of the fingers; and at 8, another "flexor" muscle of the wrist. The muscle figured at 11 is the *abductor pollicis*, a muscle which separates the thumb from the fingers, and assists in giving to the thumb its great range of movement; while the *palmaris brevis* muscle (10) wrinkles the skin of the inner side of the palm of the hand. The muscle marked 13 is the *long supinator* muscle, which assists in turning the palm upwards when the hand has been lying palm downwards; and at 12 is shown one of the bending muscles of the thumb.

The *diaphragm* or *midriff* (Fig. 2), as has already been explained, is the great muscle which separates the chest from the abdomen. It is the chief agent in inspiring, and thus aids in enlarging the chest. The bulk of the muscle is shown at 1, 1, while the rib-cartilages are seen at 2, 2.

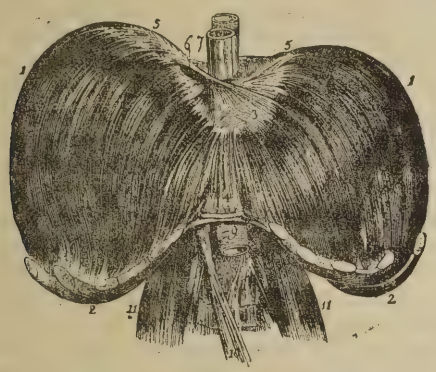


Fig. 2.—The Diaphragm or Midriff.

The centre tendon is seen at 3; and the gullet (7), great main artery (9), and *psoas* muscles (11, 11) are also seen. When the midriff acts, it is drawn downwards, and thus extends the chest. In hiccough and sobbing, it is the diaphragm which is spasmodically affected; and in laughing or crying, its action is equally distinct.

We have already seen that to the action of muscles the "expression of the emotions" is due. The play of the features is carried out by means of muscles, and the face thus comes to represent "the dial of the mind." In Fig. 3, the superficial muscles of head and neck are seen. The nose muscles (1-6) are more or less rudimentary in man as compared with their development in lower life; and of the ear muscles (22, 23, 24) this remark holds true. The great muscle (*occipito-frontalis*) (20, 27) raises the eyebrows by the contraction of its front portion, as well as the skin over the root of the nose. The two parts of the muscle (20, 27) are connected by a broad band of fibres (32) resembling tendon-fibres in their nature, and covering the top of the skull. The eye-muscles are also well shown in this figure: that figured at 19 (the *orbicularis*) closing the lids; while that depicted at 26 draws the eyebrow inwards and downwards, and wrinkles the forehead. The *orbicularis* of the mouth (8) closes the lips and contracts the mouth-opening; while the great *masseter* muscle of the jaw (13) raises the lower jaw against the upper, and thus assists in chewing. The broad muscular sheet (30), called the *platysma*, is a rudiment in man of a skin-muscle largely developed in lower animals. It wrinkles the skin of the neck, and assists in drawing down the lower lip and angle of the mouth, as in the expression of melancholy. The *sterno-mastoid* muscles (28), acting together, bend the head on the chest; but when one acts, it draws the face towards the shoulder of that side. The *trapezius* muscles (29) of the back act in various way; when the head is fixed they elevate the shoulder, as when a weight requires to be carried; but if the shoulders are fixed, they draw the head

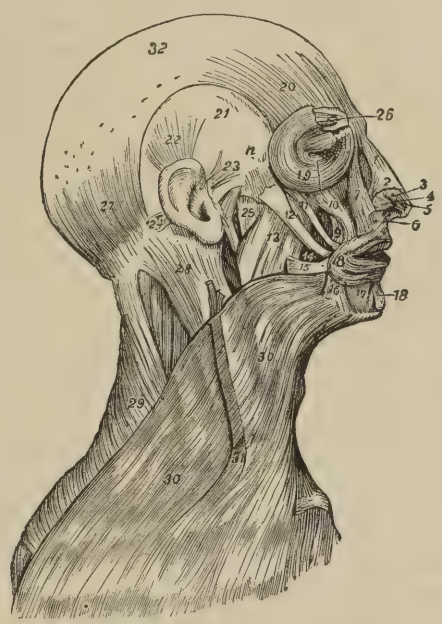


Fig. 3.—Muscles of Head and Neck.

backwards when acting together, or to one side if only one muscle acts.

A final feature of interest in the history of muscles is found in the peculiar "stiffening" which muscles undergo after death. This is called *rigor mortis*, or *death rigor*. In the dead body, the muscles appear to contract, and to fix the body in its position of rest. The neck and lower jaw are first affected; then succeeds the rigor of arms, body, and legs. The stiffening passes off in much the same order as that in which it appears. About ten minutes is the shortest period after death at which the stiffening of muscles begins; while this process is never delayed beyond seven hours after life has become extinct. It is curious to note that in cases where there has existed great exhaustion of the muscles, this *rigor mortis* begins soon after death. It comes and goes very quickly after death which is due to wasting diseases. Conversely, where the body has been well nourished, where death has been sudden, and where, therefore, the irritability of the muscles remains long in force, the stiffening is delayed in appearance and lasts for a considerable period of time.

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

The Law and the Quacks in Liverpool.—This city has for years past had a most unenviable notoriety for the shameless impunity with which the advertising quacks have been permitted to distribute their filthy literature in the open streets. Fortunately for its future credit, the Liverpool Improvement Act, 1883, will enable the authorities to deal successfully with this serious evil. Under the 32nd section of this new Act a man has been convicted and fined 10s. and costs for distributing indecent books, and it was stated by the prosecuting solicitor that the magistrate had discretionary power to inflict absolute imprisonment, without the option of a fine. Mr. Raffles, the stipendiary magistrate, expressed his satisfaction that such a law had been passed.

Common Lodging-houses in London and Paris.—It is a lamentable fact that our neighbours, instead of coping with the danger of cholera by adopting, at least, elementary sanitary precautions, have spent their best energies in denouncing the policy of England in respect to maritime quarantines. As an example in point, we may take the housing of the poorest sections of the population. In London these live in what are known as registered common lodging-houses, and in spite of the poverty and irregular habits of this class, the mortality among them is a little less than the average mortality of the entire metropolis. This result must be attributed to the constant inspection of these lodging-houses by the sanitary police, and the excellent regulations with regard to drainage, ventilation, &c. In Paris the reverse is noted. Disease is always most prevalent in buildings that correspond to our common lodging-honses, for there is no sanitary police to keep them in order. In London, strict rules are laid down, and very generally carried out, to prevent overcrowding, but in Paris overcrowding is daily on the increase. Thus, our sanitary commissioner, when reporting on the causes of the recent typhoid epidemic in Paris (*vide* the *Lancet* of January 6, 1883, p. 31), noticed that the number of poor lodging-houses was 9,050 in 1876, with 142,671 tenants, and that these figures had risen in 1882 to 11,335 and 243,564 respectively. This showed that the number of lodgers augmented far more rapidly than the number of lodging;houses, the overcrowding being thus aggravated. We also gave statistics of the quarters where the rate of mortality from typhoid was the highest, and this corresponded with the district where the greatest number of lodging-houses, and the most overcrowding, had been recorded. Apparently nothing has been done to check this evil. A plentiful supply of statistics has been prepared by the authorities on this subject, and the police keep the keenest watch on each individual lodger; but nothing is done towards supplying traps to the drain-pipes, ventilating the rooms, or for the removal of the closets from the vicinity of the bedrooms and other unsuitable positions. Fever is constantly present in such houses, but effective disinfection and isolation are never practised. The size of the houses, many of them having as many as six storeys and 200 inhabitants, aggravates all these sanitary defects. Fortunately, the French poor spend the greater portion of their time out of doors, and are also more tidy and clean in their rooms and in their dress than the same classes in London. It is rare to see in Paris the filthy bedding on which our lower classes are content to sleep. The greater sobriety and thrift of the French poor help to counteract the unwholesome condition of their dwellings; but it is high time the French Legislature should protect them from infection by some enactment which would carry out, on a larger scale, provisions similar to those of our Common Lodging-houses Act of 1851.—*Lancet.*

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

THE DOMESTIC USES OF THE CLINICAL THERMOMETER.

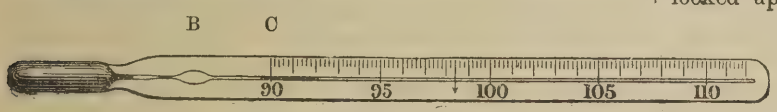
By M.D.

From the appearance of mystery on the part of large classes of our patients when the temperature of the body is accurately taken, we may infer that the purpose of our pains is as yet but little understood, and certainly the value of close observation regarding this important factor in disease is as yet unappreciated outside medical circles. It is a singular reflection that, up till quite recent times, the medical profession overlooked a means of ascertaining the patient's condition which appeared to be so close at hand; that the temperature of the atmosphere, outside and within the bedroom, should be considered of importance, as well as that of baths, affusions, &c., and yet no inventive genius was found to supply an instrument of precision for obtaining the heat of the body itself. The hand laid upon the forehead or other part was deemed a sufficient index of the patient's temperature; and this is still the method relied on by a few antiquated physicians, and by the public generally. It should be known that it is quite impossible for even an educated physician to *approach* exactness by touch alone; that the conditions to be considered are so numerous and variable, as to upset the calculations of the most experienced observer; and that a mistake in such a matter may be very serious indeed. The temperature and degree of moistness of the patient's skin, as well as those of the hand employed, have the most obvious effect in disturbing our confident opinions; and, as a matter of fact, we have seen a consulting physician, deservedly esteemed, *guess* a temperature at 102° when the thermometer showed it to stand at 106°. The child's state appeared otherwise improving, yet this little observation told us that death was probably at hand. But for the thermometer, the mother would have been assured of her child's safety; as it was, we warned her of the event which happened but a few hours later. It is not, however, to urge physicians to use what they now deem indispensable that we write, but rather to show our readers how valuable is this instrument as a domestic resource in cases presenting difficulty. In a trifling ailment its use is for reference, in a serious attack it may give immediate warning that the physician is required; and even while the doctor is in attendance he often wishes observations regarding the temperature to be taken several times a day, in his absence, for his guidance and information.

Let us offer a few illustrations of the uses to which the clinical thermometer may be put by any intelligent person. The natural temperature of the human body is 98·4°, and the little arrow seen on the thermometer (see illustration) indicates this normal degree of heat, so that when the index (as will hereafter be explained) rests at the arrow, the natural temperature is proved to be present. It is the variations above or below the arrow that mark the presence of disease.

The agony of colic is well known, but it is generally felt to be of little danger in the absence of inflammation. In peritonitis or inflammation of the bowels, the temperature runs quickly up to over 101°; in colic it scarcely rises more than a degree, if even thus far, above the natural

temperature, namely, 98°·4. A severe pain in the side is felt, and pleurisy is suspected. If the temperature is normal, there is no pleurisy, and the pain is probably neuralgic. Diarrhœa may continue for a few days, and the patient feel so out of sorts that typhoid fever seems to have set in; but we know that all the specific forms, such as typhoid, typhus, scarlet fever, diphtheria, or measles, are accompanied by such an increase of body heat as will probably send up the record to 101°, or possibly three or four degrees higher. A child with persistent vomiting, sore throat, and high temperature will probably in a day or so show the rash of scarlet-fever. In any case, when a temperature remains above 100° or 101° for more than a day, or perhaps two days, without obvious cause, the doctor should be consulted, as the danger flag has been hung out. If the child has disordered stomach or sustained a chill, the thermometer will record fever, but, after a purgative in the one case and a tepid or hot bath in the other, the increased heat will be found to be gone, and with it any alarm which may have been felt. In the course of an inflammation or fever, the friends can be informed by the medical man what degree of heat he expects, and should this be exceeded the doctor should be informed of the fact. Indeed the clinical thermometer is an instrument which every family of education should be possessed of; its uses are manifest both as evidencing disease and health, and especially to families at a distance from their medical adviser, its value may be immeasurable.



Casella's Clinical Thermometer

It can be obtained from any instrument maker for from 7s. 6d. to 12s. 6d., or more. Its application is a very easy matter. The bulb containing the mercury should be placed in the mouth or armpit; care should be had in the last case that clothes do not intervene between the instrument and the arm, and that it is so placed in the arm-pit as to be completely surrounded by skin. The patient must then press the arm gently to the side so as to retain the instrument, and in five minutes the thermometer will show the body's temperature.

We give an illustration of Mr. Casella's "Infallible" Clinical Thermometer, to be obtained of the maker at 147, Holborn Bars, London. The thermometer of Mr. Casella possesses, as shown at B in the illustration, a small chamber or "trap." When in use, the index C, being composed of mercury, expands on reaching the chamber B, and nearly fills the space, while, by aid of a contraction below, the enlarged index is preserved and prevented from being lost or disarranged. Time and trouble in taking observations are thus saved. In setting the thermometer, the index or small *detached* piece of mercury (C) is made, by one or two swings of the arm, to pass downwards so that its top is brought down to about 95°, and *not lower*. The bulb is then inserted in the mouth or arm-pit as described for three or five minutes, when, on removal, the *top* of the index will register or show the exact heat. The "index" in Mr. Casella's "Infallible" Thermometer can never give a wrong indication or shift from its position until it is "re-set" for a fresh observation. Mr. Dollond, of 1, Ludgate-hill (as was duly noted in HEALTH No. 30, page 77), also sells a highly useful and safe Clinical Thermometer for family use.

It should be added that, if used to take the temperature of patients suffering from infectious disease, the thermometer should be disinfected by being washed in "Sanitas" or carbolic acid solution after each time of using. In taking the temperature under the tongue, the index should be "set" as directed, and the bulb should be placed as far back under the tongue as convenient and agreeable; the mouth should then be kept shut, and the patient should breathe through the nose. Three minutes are sufficient for taking the tongue-temperature. In the arm-pit the thermometer should be left for five minutes, and the fore-arm should be made to lie across the chest, so that the thermometer may thus be made to rest in a sheltered position.

The temperature should be taken in ordinary cases at 8 a.m. and 8 p.m. Two o'clock is a convenient hour for a third observation. Variations in temperature, it should lastly be remarked, occur in healthy persons, but such change does not usually amount to more than 2° or 3°. What is to be regarded as deserving of attention under the ordinary circumstances of life is a fall below 97°, or a rise above 99·5. In fevers, as a rule, the temperature does not rise above 106°; but in fever a heat of 108°, continuing even for a very short time, would be regarded as a symptom of the most dangerous character.

REGARDING the temperature in health and disease, Dr. Semple gives the following interesting hints in the *Medical News*:—"1. A very high or very low temperature must be looked upon as dangerous; should it be excessive either way, the case will probably prove fatal. 2. A very sudden change is suspicious, and very frequently dangerous. In children, however, the presence of indigestible food in the intestinal canal, may suffice to cause a rapid rise in the temperature. 3. After the temperature has been stationary for some time, or has commenced to fall, a fresh rise may herald the advent of some complication, or the approach of a new disease. 4. An unexpected fall may denote hæmorrhage, exhausting diarrhœa, or the perforation of the peritoneum or pleura (lining membranes of abdomen and chest). 5. A considerable rise during the course of a disease which is not generally regarded as febrile—viz., in tetanus, epilepsy, and cholera—usually precedes death."

GREEN OYSTERS.—In the Biological Section of the recent meeting of the British Association for the Advancement of Science, at Southport, Professor Lankester, F.R.S., gave an account of an investigation he had made into the colouring matter of the green oyster. The cause of the green colour in the oyster was decided fifty years ago by a French oyster-cultivator, who was in the habit of producing them for the Paris market. This gentleman found that in the ponds in Normandy in which these oysters were produced there was always a green deposit. He thought it was a vegetable substance, and called it *Vibrio ostrearis*. It had since been maintained that it resulted from the contact of the oyster with copper, and it had been alleged that cases of poisoning had in consequence occurred. The explanation, though plausible, as there were minute quantities of copper in the tissues of the oyster, was not the real one. The green substance to which he had referred had been found to be living protoplasm. It came from a microscopical organisation known as the *Mavicula ostrearis*. This organism was swallowed with the water by the oyster, was absorbed into the blood, and the colouring matter was deposited on the surface of the gills and the labial tentacles. It imparted no particular flavour to the oyster, for he would defy any man to distinguish between the green oyster and the white one with his eyes shut.—*British Medical Journal.*

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

A WINTER AT PENZANCE.

As a winter resort for invalids and others, perhaps no place in England is so rapidly coming into favour and notoriety as Penzance and its charming neighbourhood. There is a very large class of people who are precluded, both from motives of economy, and by the necessary sea-voyage, from wintering in the South of France, or other continental resort. A very excellent and in every way satisfactory substitute will be found in the town just mentioned.

The climate of Cornwall is one of its most peculiar and distinguishing characteristics, in which it forms so marked a contrast with the general climate of this country. The south side is warmed during winter by a submarine current that reaches it from the Gulf of Mexico, or the Gulf Stream, and at that time the sea is four or five degrees warmer than the land.

According to closely-made calculations, the seasons may be said to be some weeks more advanced here than in the North of Italy, but generally agreeing with Naples. This advantage lasts until the end of March. From the early part of May onwards Cornwall loses all its premature gains, if compared with those counties which are as cold or colder in winter, but considerably hotter than this county in summer. It is a well-established fact that trees are often in leaf in the vicinity of London quite two weeks in advance of those in Cornwall. The reasons are very plain. Our vernal-like winter does not allow the proper and essential ripening of the newly-made wood, therefore the vital principle of vegetable life continues in action, consequently the tree has not fully performed the functions of one season before it commences upon that of the next; in short, vegetation seems to be ever in a more or less progressive state, and this fact may be suggestive of there being a perpetual spring in Cornwall.

Cornish summers are as remarkable as the winters. We have no summer that brings with it a solar heat equal to that of the Midland counties. Thus, to many people the climate of Penzance is still more of a desideratum. The following information is summarised from Dr. Forbes' treatise, "Observations on the Climate of Penzance," a work which has long since been out of print.

The general character and peculiarities of the climate of this district depend, as in other cases, on its geographical position and physical configuration. Placed in the lowest latitude of the island, its seasons ought on this account to possess a more genial character than those of the more northern part, and this effect of geographical position is greatly increased by other circumstances. The whole of Cornwall, indeed, but more especially the Land's End district, possesses, as far as regards climate, all the advantages and disadvantages of a small island.

Although our winter temperature is very high, our summer temperature is very low, and for this circumstance will approximate one mean temperature to that of places of much more inclement seasons. The truly peninsular situation of Penzance accounts for the remarkable equability of its temperature, which is conspicuous no less in the variations of temperature of successive days or hours than in the extreme range of the day, month, or year.

Cornwall has ever been obnoxious to the charge of great humidity. In so far as the charge rests on hygrometrical humidity, and also on the number of days on which rain falls, perhaps it is well founded; but, as regards the actual quantity of rain, the imputation is certainly beyond the truth. Mr. Borlase has accurately observed:—"Our rains in Cornwall are rather frequent than heavy or excessive, and we have very seldom a day so thoroughly wet but that there is some intermission, nor so cloudy but that the sun will find time to shine."

Fogs are not by any means common, and when they do occur are of the most ephemeral character. Frosts are slight and transient; this is so remarkably the case, that it is a rare occurrence for the ponds in this district to be frozen over sufficiently to bear the weight of a man, or even of a boy.

The climate of West Cornwall is fully as remarkable for its great variability in respect to wind and rain, as it is for the singular unchangeableness of its temperature. Westerly winds are much more prevalent in this district than any others; the direct south winds are much more prevalent than the direct north winds, yet winds from all the northerly points, taken together, are considerably more prevalent than from all the southerly points—this is principally owing to the greater prevalence of the north-west winds.

Sir James Clarke observes that aged invalids with whom, in general, a soft climate agrees, and to whom a moderate degree of humidity is not objectionable, might more particularly derive benefit by residing during the whole year at Penzance. The great mildness of the winter would enable them to be much more in the open air, and they would have less to dread from the coldness of the nights than in any other part of England.

Dr. Couch, an eminent resident medical authority, writes the author of this article as follows:—"It is generally considered that the climate of Penzance is specially suited for invalids who require a mild, equable climate, rather than for those to whom a colder and more bracing air is preferable. People with delicate chests, who cannot bear the cold of an English winter in the middle or northern counties, and have to go to the South of France to escape it, find Penzance suit them well. I have known persons who could live nowhere else, and have to resort here many winters in succession. People who suffer from rheumatism in any form generally find that they get on well here—better than in most places. It does not appear to suit people who have disease of the liver so well as many other places, although in this case I have known exceptions."

As regards the important item of lodgings, we may state that these are both plentiful and cheap all through the winter, but only during that season. The hotels are both commodious and moderate in charges.

The scenery is well known to be scarcely surpassed, of its class, whether in winter or summer.

Old Manuscript Ink.—The following formula is said to have been in use in 1654, and to have produced an ink of great permanency, if one may judge from manuscript written by the person who is the authority for the formula:—One and one-half drachms of coarsely-powdered galls, six drachms of sulphate of iron, ten drachms of gum-arabic, and one pint of soft water, are to be placed in a bottle, which is to be securely stoppered and placed in the light (sunlight if possible). Stir the contents occasionally until the gum and copperas are dissolved, after which the bottle should be shaken daily. In the course of four to six weeks the ink will be fit for use. The addition of ten drops of carbolic acid will prevent the formation of mould.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

TELEGRAPHY AND HEALTH.—The *Boston Medical and Surgical Journal* says that the conspicuous position in which telegraphers have been placed by the strike in America has served, among other things, to call attention to the great demands made by that calling upon the nervous system of those who follow it. The first-class operators all read by sound, and in a large office where a hundred or more receivers are all buzzing at once, the strain upon the organ of hearing, as well as upon the cerebral centre of audition, protracted as it is through ten hours daily, is very great. Of course, in this, as in every other occupation, it is true to a certain extent that "custom makes it a thing of easiness," yet to discriminate between the longer and shorter dashes in an instrument clicking at the rate of a very large number of words per minute involves, none the less, a very close exercise of the attention, even when it is done only for the regular working hours of the day, while those operators who have been obliged since the strike to work double time have been excessively exhausted. The nervous and muscular energy expended by a rapid sender is perhaps still greater. It is on the whole surprising that "writer's cramp" is not more frequent than it is among telegraphers. It is said that few operators are good for much after the age of thirty-five years.

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VANILLISM.—A distinguished professor of the Faculty of Medicine of Bordeaux, Dr. Layet, has just read an interesting communication on certain injurious properties of vanilla, of which a satisfactory explanation has up to the present been wanting. The affections have been studied at a warehouse in Bordeaux, where, on an average, 25,000 to 30,000 kilogrammes of vanilla arrive every year. In these storehouses the pods are cleaned, sorted, and classed according to their quality. These manipulations seem to cause certain symptoms among the workmen and women. At first an itching of the face and hands, associated with a powerful smarting sensation, is experienced, and the skin becomes covered by a pruriginous eruption, swells, reddens, and desquamates at the end of some days. At other times there is a feeling of malaise, with dulness, stiffness, and muscular pains, which oblige the worker to give up this kind of labour. The cutaneous malady seems to be due to an acarus which appears as a small white rounded body, occupying generally the ends of the pod. This insect does not penetrate the skin like the acarus scabiei, but determines the affection by its mere contact. Probably the parasite is aided in its irritant effects by the presence of "givre" in the form of pale acicular crystals. The nervous symptoms M. Layet is inclined to put down to the manipulation of inferior pods of vanilla containing much oily juice enveloping the seeds in the interior of the siliquæ.—*Land.*

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CLEANSING MATERIAL FOR SHOW-WINDOWS, MIRRORS' &C.—One of the best materials for this purpose is a mixture of calcined magnesia with enough purified benzin to produce, when shaken up, a thick milk. It should be kept in vessels provided with well-ground glass stoppers. For use, a small quantity of the mixture is applied to a muslin rag, or better, to a wad of cotton, and the windows, &c., rubbed with this. It may be very readily cleaned off without leaving any deposit in the corners.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON VEGETARIANISM.

The Perfect Way in Diet: A Treatise Advocating a Return to the Natural and Ancient Food of our Race. By ANNA KINGSFORD, M.D. (Paris). (London: Kegan Paul, Trench, & Co.)

THIS is an interesting book, not so much because Mrs. Kingsford wields her science in the advocacy of vegetarianism, but because she contrives to include within its limits a large number of facts regarding the general physiology and chemistry of foods at large. Mrs. Kingsford's book is a translation of the thesis which she presented for her degree at Paris, and, although here and there she descends to pieces of very special pleading on behalf of vegetarianism, her essay, it should be said, is marked by great lucidity, and by a thorough knowledge of the topic whereof she treats. For example, Mrs. Kingsford devotes a very considerable part of her work to a description of the horrors of the slaughterhouse. The miseries of transatlantic cattle steamers are described; and the spectacle of sharks tearing cattle which had been thrown overboard from a Madagascar steamer (to save the ship, by the way) is also dwelt upon. Frank and candid readers of Mrs. Kingsford's book perusing these pages will naturally ask what all this has to do with vegetarianism? Mrs. Kingsford is surely too wise and accomplished a writer to appeal to mere sentiment where the issue before her is a grave scientific one, to be decided one way or the other by science alone. No one will ever be made a convert to vegetarianism because a slaughter-house is the reverse of æsthetic, or a cattle ship the antipodes of pleasant. Again, Mrs. Kingsford's special pleading is sometimes carried so far that it tends to weaken an otherwise powerful case. What, for example, is the inference to be drawn from the case she mentions (p. 53), wherein a young lady "of nervous temperament" became "intoxicated" on two mutton chops? Simply that she should not eat mutton chops, or flesh of any kind. But surely we are not meant to infer that the case of the young lady is that of mankind at large; and if not, it is hard to discover why Mrs. Kingsford weakens her pages with such details. One case proves nothing. Individual peculiarities and constitutions count for everything in the matter of foods, diseases, habits, and in every detail of life. It is this neglect of the marked differences in constitution in individuals and races which militates against the success of all special pleading in the question of food.

We are not opposed to vegetarianism. On the contrary, we believe it to be for many persons the system most suited to their cases, and best adapted to preserve the body in health. But to argue that a vegetable dietary is that which should be partaken of by all, is to make a statement which does not receive from science or the experience of mankind, any confirmation. That which primarily decides the food of nations is climate. Mankind eat what lies to their hand. The Eskimo is an animal-feeder, because he cannot obtain plants, and because nature has taught him that from the fat of the animals he hunts, he can readily obtain the heat-producing food he requires. In the south, man, surrounded by fruits and grains, easily grown, becomes a vegetarian as naturally as the northerner is an animal-feeder. That which as a secondary matter decides the food of the individual, is temperament or

constitution. We tend to eat that which experience shows us best agrees with us; and through many stumblings we arrive at a suitable dietary. No one who knows anything of the physiology of foods denies that from plants alone man may obtain the necessary nitrogenous and non-nitrogenous matters needed for the support of his body. But he can also obtain such a combination from the animal world alone, or from animals and plants combined. For this country we are persuaded that the mixed dietary is that best suited for an ordinary life. Experience proves this to hold true for the mass. Individual knowledge and research prove that the statement holds true for most of us, and also show that there are exceptional cases in which a vegetable dietary may with advantage supersede the mixed dietary of ordinary life.

Mrs. Kingsford, it should be added, also directs attention (p. 71) to the parasitic dangers of meat-dietary. She rightly shows that "flesh infested by parasites infects the eater of it almost invariably;" but she neglects to add what experience and experiment have shown, that it is badly or imperfectly-cooked meat which places within our frames the parasitic guests. Nobody—not even the most ardent anti-vegetarian—dreams of recommending half-cooked or smoked meats; but if Mrs. Kingsford will peruse Dr. Cobbold's works, she will find evidence therein detailed proving that sufficient exposure of meat to the temperature required for thorough cooking, destroys every parasitic life it may contain. With rigid veterinary inspection and careful feeding, there is no reason why the animals on which we subsist should not be healthy as regards their flesh; and it is notable that even though the ox and sheep are vegetable feeders, they are liable naturally to contract parasitic diseases. Improperly-cooked vegetables give us parasites; but Mrs. Kingsford would not decry vegetarianism simply because its materials were carelessly cooked. And the same rule applies to a dietary in which animal food is contained.

The foregoing remarks contain all that need be said in opposition to the views expressed in this book. We have already expressed our high opinion of its merits. It is ably and clearly written, and will afford the reader a clear and succinct account of the general principles which regulate our food-taking habits. Information of this kind is all-important from a social and sanitary point of view; for "food," as the physical basis of life, lies at the foundation of health, and the obtaining of the best and cheapest foods is a matter which bears very intimately on questions of social and political economy. While Mrs. Kingsford's little book is here and there somewhat partisan-like in its tone, it is, nevertheless, a safe guide where matters of pure physiology are discussed. There is one sentence of Mrs. Kingsford's (p. 12) which seems to contain the clue to the solution of the food-question. Our authoress points out that "it is, in fact, well known that the functions and secretions of the organism accommodate themselves with more or less ease aud rapidity to the habits of life and food of the individual." This is a sound opinion; and as such, shows us that the individual experience of what is most suitable for food should be the best and safest guide in the choice of a dietary.

LAND AND HOUSES.

Building Estates, by Fowler Maitland. With Plans and Illustrations. (London: Crosby Lockwood & Co., 1883.)

Mr. Maitland's work will be found highly useful by all who have to do with the laying-out of building plots and the disposal of land for building purposes. He divides his book into four sections; dealing, respectively, with the general questions of building-lands, with the sanitary aspects of the question, with land tenure, prices and valuations, and with agreements connected with the purchase and sale of building-land. This book is eminently trustworthy, and should be found in the hands of all who desire sound information respecting the relations of owners of the soil, and builders, or those who purchase ground for the erection of houses.

Between 1801 and 1881, Mr. Maitland tells us the population of England and Wales increased from 8,892,536, to 25,968,286 persons. The dwelling-houses during the same period increased from 1,575,923, to 4,833,844, "an increase of 3,257,921 houses, being nearly in the proportion of one house to every five persons."

Mr. Maitland also tells us that 80 acres of ground at Finchley and Hendon, during the last year or two, sold for building purposes at £410 per acre; 9 acres (nearly) at Wanstead, Essex, brought over £1,000 per acre; 10,000 yards at York, 7s. 6d. per yard; 6 acres at Hampstead, £1,333 per acre; 5,117 yards at Stoke-on-Trent, 2s. per yard; 7,169 ditto, 2s. 10d. per yard. At Margate and Westgate, land has realised, for building purposes, from £2,500 to £4,500 per acre. At Weston-super-Mare, land bought for £200 per acre is now selling at £1,200 per acre. These facts show how powerfully the laws of supply and demand affect the prices obtainable for building sites.

Sanitary Appliances, Etc.

A Useful Invention.—Messrs. H. Vale & Sons, of 210, Summerlane, Birmingham, have sent us a pair of their "Combination Spectacles and Eyeshades," which we regard as a highly important invention, from a health point of view. The spectacles are of tinted glass, and are made in all varieties and strengths. The feature of Messrs. Vale's "Combination" Spectacles, to which attention must be specially directed, is the eyeshade, which forms part of the glasses. The upper part of the glass each side bears a concave, dark-tinted shade. When the spectacles are worn, not only does the tinted glass diminish light irritation, but the shade above forms a complete protection from the top light, which is so distressing to those who work much by gaslight, and which is provocative of severe headache. For journalists and others these spectacles we deem invaluable. We have used Messrs. Vale's "Combination" for some time in night-work with gratifying results. A total absence of heat, weariness, and fatigue is obtained by the use of these "Combination" Spectacles. It may be added that Messrs. Vale furnished our troops in Egypt with the preserves used in the campaign; and amongst the other inventions of this firm are a complete series of masks, spectacles, and protectors, adapted for the protection of eyes and face in all occupations where a regard for health demands such appliances.

Disagreeable Odour of the Feet.—M. Vieusse, principal medical officer at the Military Hospital at Oran, states that excessive sweating of the feet, under whatever form it appears (whether as mere supersecretion accompanied by severe pain, or with fœtidity), can be quickly cured by carefully-conducted frictions with the subnitrate of bismuth; and even in the few cases where this suppresses the abundant sweating only temporarily, it still removes the severe pain and the noxious odour which often accompany the secretion. He has never found any ill consequence follow the suppression of the sweating.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "THE PUBLISHER," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* EDITOR *and* PUBLISHERS *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The EDITOR *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

["Letters to the Editor" are held over.]

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

ERGO.—Not so far as we have heard; but inquire of the agent.

ALTIORA.—Parkes' "Hygiene" will suit you.

BEGUM.—About 120° F.

PETO.—1. We believe the remark was one of Miss Nightingale's. 2. See "Life of George Combe," by Charles Gibbon (Macmillan).

INTERESTED.—Don't waste your money and risk health by trying any such invention. The whole system is pure quackery.

I. ANDERSON.—See our papers on "The Body and its Structure."

A. TODD.—1. Probably three-fourths. 2. See Mr. Galton's recent works; also Ribot's "Heredity." Darwin's "Pangenesis" will be found in his "Animals and Plants under Domestication."

F. B.—Apply to the Secretary.

A. C. O.—There is one in Glasgow.

C. VERTEGANS.—No; the technical work will be intended for the medical profession. The articles in HEALTH will afford you all the information you can require.

SANITARY.

OLGA.—It is possible that the street sewer-ventilator may be the cause of the annoyance. Apply to your Sanitary Inspector.

ERMINE.—1. Decidedly injurious. 2. Old "pan" closets should be replaced by newer inventions—*e.g.*, Banner's, Jennings', &c.

C. LAKE.—Not a nuisance legally. You would require to show that it is detrimental to health.

A. Z.—A costly procedure. Don't attempt it.

INFORMATION.—There is such a system. Apply to the makers in Amsterdam.

UBIQUE.—Cut the end off, and discharge the pipe into a gully.

CERTIOR.—You have no remedy in law. The case has occurred before, and has been decided against your views.

INTIME.—An article on "Closets" will appear in an early number.

PLAIN CAKE.—We are of opinion that the flour in your cake is at fault. The stringy threads are probably due to the growth of a fungus, which owes its development to some impurity in the flour. With a change of flour, and using the same ingredients, you will avoid the impurity at present noticed. Try to trace the source of the flour.

F. C. RICHARDSON.—Many thanks for your kind suggestion. The idea has already been under consideration, and we hope to carry it out very shortly.

ANTS.—Have the whole premises thoroughly washed with carbolic acid and water (1 to 10 or 20), and use "B. B. B. Insect Destroyer" (Norman, 37, Walbrook, E.C.), as a certain cure, in our opinion. No; no ill-effects, we should say. Let us hear if our advice is satisfactory.

TINA BRANNEY.—Try Norman's "B. B. B." Insect destroyer, to be had at 37, Walbrook, London, E.C. This has proved successful in destroying insect pests of all kinds.

MEDICAL.

OLAF.—1. Hot baths are your surest means; but remember that the kidney-affection should be treated as a primary detail. The following will be of service to you:—Bitartrate of potass, three drachms; infusion of buchu, six ounces. A tablespoonful thrice daily. Not to be used constantly. 2. We do not approve of homœopathy, simply on the ground of its unscientific standing and basis. The question is, of course, a very wide one; but, as a system, we cannot commend it.

WEERDE-LEY-MALINES.—Glad to hear HEALTH is appreciated in your Flemish quarters. 1. We do not think you need feel alarmed. A system of sanitation without drainage may be as safe (*vide* our recent papers on "Deodorants and Disinfectants" and the dry-earth system) as one where drains are employed. Use disinfectants; but if refuse is so exposed and turned into manure, it will do no harm, under ordinary circumstances, so long as it is not allowed to contaminate the water-supply. 2. We have not analysed the "Restorer." Add a little iodide of potass solution to it. If it contains lead, a yellow precipitate will be thrown down. We prefer a little Macassar Oil well rubbed into the roots, and, above all, a soft brush. Read our "Hair" papers in early parts of HEALTH. 3. No special antidote beyond a smart emetic to empty the stomach (warm water, mustard, and salt), and stimulants afterwards, if there is collapse. 4. Difficult to advise, where the windows open as yours do. Bore holes in the wood-work and fit wire gauze over them; or have an ordinary flap-valve placed near the ceiling, and opening inwards. Glad to be of any further service to you.

ARTISAN.—See to the state of your bowels, and try a little of Morson's "Pepsine" with your food. You ought to have more outdoor exercise.

VOX HUMANA.—In your case try the effect of a course of cod-liver oil—a dessertspoonful thrice daily after food—or the cod-oil emulsion. Great good may follow this course, which will give you a general toning up. Clothe warmly, and avoid chills.

AN ANXIOUS MOTHER.—See to the children's health, and for the ringworm give cod liver oil poultice, clip away the hair round the patches, and use (for a child of ten or so) a lotion of pure carbolic acid two drachms added to one ounce of glycerine. This to be applied to the patches.

ANXIOUS DOE.—We think you are a little inclined to be over-anxious about yourself. For the chest and hands—the ailments of both, we think, proceed from the same cause—we should strongly advise you to try a course of hot salt baths. If not convenient to visit Droitwich, you might contrive to take such at home three or four times a week at night. A teaspoonful of Fellows' "Syrup of the Hypophosphites" taken in a wineglassful of water thrice daily before food for a time will also benefit you. Mr. Carpenter will doubtless send you his opinion of the "belt" in due time. In respect of future inquiries, please re-state them one at a time. Your food should be light, and no stimulants beyond good claret with meals should be taken.

G. W.—May proceed from various causes. As a preliminary measure, try anointing with pure Vaseline, or with Vaseline to which 3 per cent. of carbolic acid has been added. Look to your clothing, and avoid all irritation. Write again if not bettered.

Y. E.—Don't be nervous or alarmed. You are merely in a low state of health. Take the tonic recommended to "Anxious Doe" above, thrice daily. The eyes will improve when your system is braced up. Meanwhile don't use them at night, and open your eyes under cold water frequently, so as to bathe them thoroughly.

ANOTHER ANXIOUS INQUIRER.—You must not make such demands on your strength at your age. Husband your strength. Your symptoms are those of over-work or over-exertion. We think the hot salt baths and tonic recommended to "Anxious Doe" above would do you good. All your symptoms will likely leave you when your system is braced up. Let us hear from you again. Don't risk cold bathing till you are completely free from your pains. Cases can had for binding Vol. I. of HEALTH. The "Index" is also ready.

MOTT.—No; the poison is not the same, and the effects are very different in respect of their serious character. You have apparently escaped the more serious result. We don't understand the necessity for the course of medicine you name, if the symptoms are as you have described them. There should be no necessity for further treatment, unless the affection is constitutional, and from your account, we should say it is not so. But your medical man is the best judge. The fact that mercury is not to be given is an evidence in favour of our opinion.

D. M'DERMID.—A case like yours demands constitutional treat-

ment. Try the effect of a course of cod-liver oil to which the syrup of iodide of iron has been added. This simple remedy may benefit you greatly; if not, write again.

G. T.—Don't waste your money on such a system. Read our papers on "How to Get Thin or Fat," now appearing in HEALTH. They will show you the rational means of curing corpulence.

T. K.—You are quite healthy, and let no one persuade you to the contrary. What you name is a common result of good health. No remedy needed.

EYESIGHT.—Tobacco varies in its effects with individual constitutions in health and in disease. You should experiment by trying f you are better without tobacco and alcohol—one or both. Smoking after food may delay digestion. Smear the eyelids at night with a little pure Vaseline. Write again if not improved.

R. A. ELLIOT.—See to your general health; use a soft brush, and rub in a little Macassar oil to the roots, night and morning.

STELLA.—You have forgotten to state exact colour of your hair. Kindly say so, and we will advise.

X. Y.—All proceeds from your stomach trouble. Begin by first attending strictly to the condition of the bowels. Take a little "Æsculap" or "Friedrichshall" water every morning for a time. Eat no suppers, and give up tea and coffee for awhile. Rest after meals is also important. (What evidence of parasites have you to offer?) Morson's "Pepsine" should be taken along with your food, which should consist at first of light articles—milk, puddings, soups (Brand's articles should suit you well), fruit, &c. By giving your stomach a complete rest for a time, and by presenting it with easily-digested foods only, you will conquer your symptoms. Let us hear from you after a trial of this advice.

R. P. PARKER.—See full advice given to "Iago," in present No. of HEALTH.

A CONSTANT SUFFERER.—Yes; barley-meal with the milk will do good. We should advise you to try in winter a course of cod-liver oil as a good tonic and strengthening remedy, and let your food be of as fatty a character as possible. This will counteract the tendency to chill, which is only a symptom of general weakness. Beef-tea (well made) should aid you also.

AN ANXIOUS MOTHER.—A Pulvermacher's Belt would do good. Full directions would be sent with the belt. Try the effect, also, of hot salt baths twice or thrice a week, and let us hear shortly how the patient progresses. The food should be light and nutritious.

R. M. D.—1. Such a case depends, as a rule, on some local cause, which only a personal examination by a physician can detect. Hot hip-baths might be tried, along with periodical rest when the pain is felt. 2. The boy's trouble depends probably on some bowel-irritation. See to this, and be sure no irritation from worms exists. Give no fluids late at night, and administer five grains bromide of potass in a little water at bedtime for a night or two.

T. HICKS.—What is meant is that only a small part of the sweating surface should be bathed with the lotion. The skin action is sufficient to carry the effect to the other parts.

MESDAMES.—In the absence of any more definite symptoms we should feel inclined to advise that the food should be very light for a time; that Morson's "Pepsine" should be given along with the food; and that when the pains are severe a hot bath should be tried. The food should consist of light soups, milk (if it can be borne), eggs, lightly cooked, and puddings. Meals to be regular as to time, and rest after food to be observed. If bilious symptoms appear, and if bile is brought up, the following prescription, to be made up by a druggist, may be given:—Podophyllin, 1 grain; compound rhubarb pill, 10 grains; extract of hyoscyamus, 4 grains. The whole to be divided into four pills, and one to be taken every third night.

DORSET.—Give up all stimulants for a time. They are injurious to you. Take open-air exercise. Apply poppy fomentations for the relief of itching; attend to the state of the bowels; and apply benzoated zinc ointment, covering the part with a piece of soft rag. Write again, if not improved.

GWALIA.—Take the tonic recommended to "Anxious Doe," in present number of HEALTH. Open-air exercise and cold sponging should also be tried.

M. CUNLIFFE.—The case you name is in some respects peculiar. You do not name any nervous symptoms, which would account for the appearances. If you send us a stamped-addressed envelope, we will forward you the name of a specialist in nervous diseases. You require a good opinion regarding such a case.

IVY.—Try plain oxide of zinc ointment, instead of the Vaseline, for a time, at night. Glad to hear our advice has been successful.

SIX FEET.—1. Yes; the interval is much too long. You should arrange to have a meal about five. 2. Depends on condition of body and constitution. Some persons perspire much more freely than others. 3. Yes; and to the cod-liver oil, in your case, we should advise you to have syrup of the iodide of iron added.

RASH BOY.—You do not give sufficient particulars to enable us to advise you. Please state fully and exactly all your symptoms.

IAGO.—Use a lotion made by adding two teaspoonfuls of tincture of hamamelis to half a pint of water. This should be used to bathe the parts, and as an injection if need be. The tincture may also be taken internally, a teaspoonful being added to eight ounces of water, and three teaspoonfuls of the mixture taken every three hours.

LILLIAN.—Try the effect of rubbing Rowlands' Macassar Oil into the head morning and night for a time, and also the use of a soft brush. As regards the itching, please specify more clearly its nature, situation, &c., when we will be glad to advise you. The head may occasionally be washed with warm soft water to which bi-carbonate of soda has been added. Take also 15 drops Fer Bravais thrice daily in water.

X.—See to your digestion. Flushing as often as not is a sign of digestive troubles. Rest after food and take a little "Pepsine" with your meals. There is no cure for blushing, which is a purely nervous phenomenon. You may modify it by strict attention to general health.

SURREY.—We know nothing of the person or of his treatment. We have, personally, no faith in such a system, which does not appear to us to be founded upon any data of scientific value. If you wish for a good opinion regarding your condition, we can send you (on receipt of stamped addressed envelope) the name of a trustworthy physician. In your case, great good may result from such a consultation. Glad to be of any further service.

W. D.—No; not injurious to health, but often a sign of robust health. Your case is not excessive; but watch your general health carefully, and avoid all sources of irritation. Sleep on a hard mattress; avoid fluids late at night, and try cold sponging. If need be, we shall advise further; but at present you are quite well.

ESTOMAGO.—Don't take the tonic continuously. Cease taking it for a time, and endeavour by wise regulation of diet, &c., to do without it. You may resume it if you relapse; but no drug should be taken constantly. Take a little Morson's "Pepsine" with your food, and avoid acids, and rest after food.

A. N.—We will send you the address on receipt of a stamped directed envelope. We never recommend practitioners by name in HEALTH.

WORTHING.—We think you should certainly try inhalations. Try compound tincture of benzoin ("Friar's Balsam"). Get an ounce of this, and put a teaspoonful to a pint of hot water, and inhale the vapour for ten minutes, repeating this three or four times a day. Do not go out for half-an-hour after inhaling, as there is a risk of cold. Take about six inhalations in the minute. In your case, cod-liver oil will also do good—a dessert-spoonful thrice daily. Write again, if not improved.

A. B. C.—Yours is a common case, and you ought to know that you will get perfectly well with attention to your general health. Use cold sponging; let your food be nutritious, but not stimulating; sleep on a hard mattress, and take a teaspoonful of Fellows' "Syrup of the Hypophosphites" thrice daily, in a wineglassful of water, before meals. Write again if not improved; but above all, be cheerful and confident.

FRED.—Give up smoking and stimulants, and also tea and coffee. Take cocoa and milk instead. Eat puddings, soups, and fruits, &c., and let your diet for a time be light. A little "Pepsine" should also be taken with the food. Give up taking pills; your regulated diet should avoid the necessity for such medicine. Cold sponging would also do good if you have sufficient reaction. Let us hear how you are after a trial of this advice.

MIDGY.—The "specs" are a symptom of digestive disturbance, and are probably due to some slight liver derangement. If the "specs" appear to remain after attention to your digestion we should counsel you to have your eyesight tested for preserves by Mr. Browning, 63, Strand, London. Avoid reading by gaslight for a time, and bathe the eyes with cold water frequently.

CHELSEA.—Your measurements do not indicate any unusual development. You seem a fairly healthy man, and you are evidently constitutionally thin. 2. Yes; but give up tea and coffee for a time. Your diet is reasonable in quantity and quality. 3. Exercise sufficient under present circumstances of work, life, &c. 4. No; we prefer *not* to wet the head in the morning bath. Many persons acquire headache from wetting the head.

L. McQ.—Certainly you are wise in your determination to give up the continual dosing of yourself with medicine. You should give up tea and coffee and try a vegetable dietary for a time. This will tone you system wonderfully, and obviate the need for medicine. If any medicine is used, try "Æsculap" mineral water in the morning. If you are not better after following this advice, we shall be glad to advise you again.

T. H.—In your case there is evidently some affection of the drum of the ear. You should see an ear surgeon in Glasgow. There is a means whereby the "drum" may be aided to perform its work,

and such a surgeon will readily apply the remedy. Visit the Ear Hospital in Glasgow.

WIDGEON.—We have always been sceptical regarding the good effects of rum and milk. In any case, such a practice should not be persisted in continuously. If health is obtainable at all, it should be so without such a remedy. If you are healthy, you need nothing else save milk and buiscuit before your walk. To take alcohol in the morning, and without food, is a baneful practice.

W. MARTIN.—1. Use the oil for a month or two to give the advice a fair trial. You wash your head too frequently. This may be the *cause* of your hair-troubles. Once a week is quite sufficient, unless there are special reasons for more frequent ablutions of the head. 2. Try hot salt baths, with 15 grains bromide of potass in a wine-glassful of water at bedtime occasionally, and clothe warmly. 3. No use in singeing the hair.

SESOSTRIS.—Bad teeth are, as often as not, inherited from parents. We fancy you will best be satisfied by consulting a good chemist. Use camphorated chalk as a tooth-powder and a moderately hard brush. 2. Occasionally, adults develop a third tooth. 3. The skins of the grapes tend to produce constipation; the pulp is laxative as a rule. 4. As a mild aperient try "Æsculap" water in the morning.

J. F. G. C.—Better beware of "electric" belts. Read Mr. Carpenter's "Electrical articles" in recent numbers of HEALTH. We recommend Pulvermacher's as a genuine belt (197, Regent-street, London, W). Most so-called "electric" belts are swindles and shams. For your ailments we recommend you to follow the advice given to "A. B. C.," in present number of HEALTH. Be moderate in smoking.

R. SMITH.—Queensland or Canada would suit equally well. You suffer from indigestion, and probably also from slight rheumatism, induced by your heated occupation. You are also evidently over-anxious about yourself. Make a change in your food. Try a vegetable dietary for a time; and take a little "Pepsine" with your food for a time. Hot salt baths taken once or twice a week will ease your pains. Write again, if you still suffer.

W. KAYE.—The children have suffered from a slight attack of fever. Your treatment is correct enough, so far as it goes. See to disinfecting your house thoroughly, and prevent all communication with your neighbours till they are well. You should call in a doctor, for home-treatment in such a case is never satisfactory. The affection is of a mild type, evidently. In the other case, the child suffers from some irritation of the lower bowel. There may be worms. Watch the child carefully, and attend to food, giving her salt therewith, and a hot bath occasionally. Thanks for your good wishes.

W. L. T. B.—You are in good health. What you name is a consequence of health, and only quacks say differently. Don't attend to their sayings; they flourish on the fears of the weak. Live carefully, use cold sponging, and fear nothing.

CARMEN.—Take the tonic recommended to "A. B. C." in present number of HEALTH for a time. The rash you speak of is only an indication of a little lowness of the system, which the tonic will cure. Write again if unimproved.

PERSEVERANS.—You have been excited, and are unduly anxious. You only require rest, good food, and cold sponging, if it can be borne. Pulvermacher's Belts (197, Regent-street, W.) are thoroughly genuine, and we should advise you to call there and see the belts, one of which will do you good. Above all be cheerful, and know your case is eminently curable. Write again, if need be.

DERFLA, N.B.—See advice to "Carmen" and "W. L. T. B.," above.

J. T.—Use a little pure Vaseline at night as an application. This will protect the skin, and may aid its health. Avoid chills above all things. You might try lime-pills, as follows:—Sulphide of lime, 2 grains; sugar of milk, 40 grains. Twenty pills to be made, and one taken every two hours. Avoid tea and coffee.

A. ROWLEIGH.—We think you should persuade the patient to subsist for a time on light foods alone—puddings, milk, eggs, &c. Brand's Beef Essence, &c. A little "Pepsine" with the food would also be advisable. If the "noise" continues, a specialist in nervous diseases should be consulted. Possibly some digestive disturbance is at the root of the matter. Glad to advise again, if need be. A few drops of glycerine might be put in the ears at night for a time, in case there is wax.

MODERN ATHENIAN.—1. See advise to "Mersey" in No. 30 of HEALTH, and "A. B. C." in present No. You need not be alarmed, as such cases as yours are common enough, and only require a little attention to general health and avoidance of all irritation as a means of cure. 2. The person you name is not on the roll of registered medical practitioners of Great Britain. We believe he holds an American qualification.

INDIGESTION.—We think you should give your stomach rest for a considerable time by taking only concentrated foods, such as Brand's preparations, Meat Essence, &c. Live for a time on soups, &c., and eat little and often. By perseverance in this method your stomach will recover its tone. You should also attend carefully to the state of your bowels, and take a little "Æsculap" mineral water in the mornings for a time.

JAMES HACKLY.—Try a vegetable dietary for a time; pay great attention to cleanliness; use soft tepid water for the face; and avoid chills. Write again if not improved.

CRANIUM.—Sponge the head daily in a strong solution of borax and water for dandriff, or apply glycerine of borax at bedtime.

SARAH.—Try hot salt baths three or four times a week; clothe warmly, and avoid chills. Attend carefully to general health. Drink lime-juice (Feltoe's "Spécialité") and let us hear if you are better.

CLAREMONT.—If you will send a stamped and directed envelope we can let you have the name of a physician whose advice will be of service to you in the event of your desiring a consultation. You are evidently in a highly nervous state, and this magnifies all your ailments. Change of scene should do you good. You should continue the tonic you name for a time.

W. ROBINSON.—Take the tonic recommended to "A. B. C.," in present number of HEALTH, and as a local application use a lotion, consisting of one drachm bicarbonate of soda, dissolved in an ounce and a half of glycerine. If not improved, please write again.

WILLIAM BLYTH.—What can we say to you, except that you are evidently nervous by constitution and temperament, and that you are evidently morbidly sensitive? Why should people looking at you make you uneasy? Why not try to have "a good conceit of yourself," like the Kilbarchan weaver? As regards your health, we should advise you to try again the tonic which was prescribed you. Try cold sponging each morning, or when you get up after your night-work. Why should you leave your trade? We should advise you to get day-work in a quiet office.

C. E. BUTLER.—1. At the age you mention, the voice has, in ordinary cases, assumed its adult character. 2. Gargle the throat with vinegar and water, or inhale the vapour of vinegar mixed with water at the boiling-point. 3. Yes; but in such cases we prefer such a tonic as that recommended to "Anxious Doe" in present number of HEALTH, to bromide of potass, which has a somewhat lowering action.

P. LAW.—You should know once and for all that what you mention is a sign of health—not of disease. Only quacks will persuade you differently. You suffer from no ailment whatever.

WRITER.—We suspect the appearance to which you allude must be due to some slight abnormality in the secretion of glands which are associated with the fluid you name. There is no cause, so far as we see, for alarm. Try the effect of cold sponging for a time.

S. B.—Try the effect of wearing a pair of the eye-shades manufactured by Messrs. Vale & Co., Birmingham. The shades are fitted to spectacles, and for night-work are invaluable, in our opinion. Smear the lids at night with pure Vaseline. You must not use the eyes at night without a shade, and the spectacles of Vale & Co. will suit you admirably. We shall advise further, if need be.

VIS MEDICATRIX NATURÆ.—We fancy a change to a purely vegetable dietary would suit your case admirably. Yours is not a case for medicine, but for careful regulation of food. Subscribe to the *Dietetic Reformer*, the organ of the Vegetarian Society in Manchester, and you will find therein advice regarding the diet in question. If you do not find this advice to suit you, write again.

H. I. J.—Consult Mr. Browning, 63, Strand, who will test your sight by a scientific method, and who will give you good advice regarding the preserves best adapted for you. See also advice to "S. B." above.

CORONA.—We do not preserve letters, so your reference to your "last" is out of place. So far as we remember, you gave no history of the affection you name. But from what you do say in your letter, we are of opinion, as before, that yours is not a case for injections. Take 15 drops of *Fer Bravais*, or of Wyeth's "Dialysed Iron," thrice daily. The condition you name depends on your general health being below par. Avoid all exercise for a time, and write again if the iron tonic above recommended does not cure you.

INTERROGATOR.—We know the asylum you name. We advise you to write direct to the Superintendent, and ascertain thus the conditions of admission. Idiots in all stages of imbecility are treated there. Make direct application.

CURIOUS.—As before, all we can say is that we should take the advice of a good surgeon regarding the knee, and be guided entirely by him. The operation named is simple enough in skilled hands. The knee is always a difficult joint to manage after ailments.

SOUTH AFRICA.—First cousins may marry with perfect safety, provided there is no disease on either side. Such marriages are not

unsanctioned by medical science. All that need be said is, that if any constitutional disease exists, it will become intensified by such a marriage; but with complete health there need be no fear. Your construction of Leviticus is nothing to the point.

F. W. D.—The person you name is not a registered medical man. He is, therefore, practically a "quack" in this country, even though he may be an American graduate. His keeping "open shop" and advertising are practices incompatible with the dignity of the medical profession. 2. We do not see that you require any further advice in the matter you name. If you do, please state precisely what you complain of. You seem to be in good health.

S. H. A.—1. There is no evidence that any worms are being passed now. If there is, let us know. 2. For the irritation, use a little plain Vaseline, and attend strictly to cleanliness, washing frequently. 3. Of the "groin trouble" you do not give particulars. So far as we can make out, you have no affection—only a nervous feeling of depression, for which we should recommend you to try the tonic ordered to "T. W. H." in HEALTH, No. 29. Write again if not improved. A simple truss worn for a time could do you no harm.

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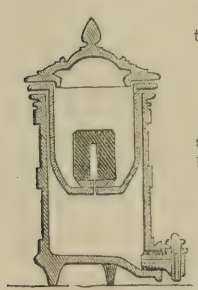

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• HEALTH •

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, NOVEMBER* 16, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE Fisheries Exhibition in London is to be followed up next year by a great International Exhibition of objects, &c., connected with the Preservation of Health and the Prevention of Disease. This is a highly gratifying piece of intelligence. It shows that health and physical well-being as topics of interest are really of national importance. Under the guiding care of an efficient administration, there can be no question of the success of the great exhibition of 1884; and there can be little doubt that this scheme will assume a thoroughly educative tone, and embrace full instruction in the various arts and sciences which assist us in avoiding the health-dangers that everywhere beset us. If the success of the Fisheries Exhibition was so marked, there should be no lack of public interest and support for an exhibition dealing with problems and subjects of far more vital importance than the increase of the food-supplies we draw from the briny deep. We shall present the readers of HEALTH, in due course, with full particulars of this interesting exhibition.

✣ ✣ ✣

THE "National Health Society" of London intend to hold a three days' conference in the Parkes Museum, Margaret-street, W., on "School Life and Hygiene." The conference is to be held early in December, and the supreme importance of the subject should secure a large attendance of the public. Within the area of the schoolroom, as has frequently been pointed out in our pages, there is a wide field for the cultivation of health science. The time is fast approaching when the care of the child's constitution will form a topic in which both parents and teachers are bound to take a high interest. The conference to which we have alluded will materially assist the formation of definite opinions regarding the regulation of childhood in relation to the school.

✣ ✣ ✣

EDINBURGH is to have continued this year the admirable courses of "Health" lectures which were organised for the instruction of the citizens in the laws of rational living. The syllabus for the present session is a most interesting one. The lectures are to be given in the Free Assembly Hall, on Saturday evenings, at eight o'clock, from Nov. 17 to Jan. 19 inclusive—a break being allowed between Dec. 15 and Jan. 5 for the Christmas and New Year holidays. Drs. Chiene, Smart, Cathcart, Macadam, Turner, and Clouston are to discourse on health-topics, lying each within the province of the respective lecturers; while Mr. Hely Almond, of Loretto School, is to deliver a lecture in the series on that attractive topic—"The Difficulties of Health-reformers." We trust that a programme so attractive as that presented to the Edinburgh public will secure large audiences. The professional reputation of the lecturers should alone draw crowds eager for instruction in sanitary science.

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THAT indefatigable health-lecturer, Dr. J. J. Pope, is doing good work in the diffusion of a knowledge of health-laws. We strongly counsel our readers not to miss the opportunity of hearing Dr. Pope's genial and racy lectures wherever such opportunity presents itself. The list of Dr. Pope's engagements includes Burslem, Dumfries, Dumbarton, Lenzie, Morpeth, Kelso, Galashiels, North Berwick, Bonnyrigg, and Whitehaven.

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IN reference to a note dealing with remedies for loss of voice in speakers and singers, printed in HEALTH, No. 27 (page 23), we think it right to remark that the paragraph in question was taken from the *Practitioner*, of August, 1882, and is there noted as having in turn been copied from the *Revue Médicale*. The amount of nitrate of potass there prescribed (2 drachms), it has been pointed out to us, while not absolutely dangerous to an adult as a dose, is to be regarded as excessive. A much greater quantity of this substance can be prescribed, provided the period during which it is to be taken is extended over say twenty-four hours. The ordinary doses of nitrate of potass are from 10 to 20 grains and upwards, but doses ranging from several drachms to an ounce or more, may, as already stated, be given, largely diluted in barley-water or other beverage, as a drink, or as "nitre whey." For the "two drachms" of the note quoted from the *Practitioner*, should be substituted 20 or 30 grains. It is probable that in the *Practitioner* paragraph, copied from the *Revue Médicale* (of April 12, 1882) two grammes (about 30 grains) of French pharmacy have been misread for "two drachms."

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THE question of home-lessons and educational overwork is exciting professional attention amongst the teachers. The Doncaster and District Teachers' Association has decided in favour of the discontinuance of home lessons. This is a step in the right direction. True teaching should be independent of such home lessons as are at present in vogue, and in the preparation of which the memory is often irretrievably spoiled and the faculties of mind stunted in the attempt to load the brain with details it has no power to analyse or comprehend. The Leeds School Board has also issued a circular to medical men and others inviting information on the subject of overstrain in education. This is what might have been expected from one of the most enterprising and enlightened of School Boards in Great Britain.

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LING'S system of Swedish gymnastics is coming to the front as an educational feature, under the auspices of the London School Board. The girls already practise the first stage of Ling's exercises, requiring no apparatus. A complete set of the apparatus necessary for the teaching of the

second stage is to be erected in a central position in London, and a Swedish instructor will give lessons for six months to the teachers in the use of the apparatus. Physical education is "looking up" in the south, at all events.

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An inquest was held last week, in London, on the body of a girl aged 17, who became ill after partaking of some "potted salmon" purchased from a grocer in Pimlico. Death was declared to be due to inflammation, the result of eating poisoned salmon. The tin in which the salmon had been contained was denuded of its tin in several places. Nitrate of tin had been formed, and decomposition of the salmon was the result. The medical recommendations that such foods should be packed in glass, and that they should not be eaten after the tin had been allowed to stand open for a time, are worth bearing in mind.

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Mr. Arthur Pease, M.P., speaking at Middlesbrough, on intemperance amongst women, lays the blame largely at the door of "grocers' licenses." Whether that vexed question is thus rightly stated or not is foreign to a more important point raised by Mr. Pease. This was, whether or not the intemperance of women was due to the lack of healthy physical exercise. We are of opinion that Mr. Pease struck the right nail on the head in making this suggestion. The life of the working woman is by no means an enviable one. It knows very little brightness or pleasure, and the temptation to intemperance is ever strongest where there is an absence of fresh air, rational amusement, and healthy recreation. The question, in all its phases, is a difficult one; but it is one, nevertheless, which cries loudly for a meed of the attention now being lavished upon the social state of the masses.

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The end of the year brings "the orange-peel season" once again to our doors. A week or so ago, an inquest was held on the body of a gentleman who slipped on a piece of orange-peel, and fell, fracturing his leg. He died in the hospital to which he was carried. A little thought on the part of the public should suffice to avert the often serious effects which follow the baneful practice to which we allude. Parents, teachers, and others in charge of children should make a special feature of the cautions which might well be impressed upon the young in regard to the habit of tossing orange-peel on the pavements. There are also "children of a larger growth" on whom such a piece of advice may not be thrown away.

Lead poisoning is often produced in such way that it is exceedingly difficult to trace the origin of the lead. A dressmaker was admitted to the Leeds Dispensary, England, having a distinct blue line on her gums, and other symptoms characteristic of lead poisoning. The attending physician took much trouble to ascertain the source of the poisoning and was unsuccessful until he accidentally learned from a merchant that silk thread which is sold by weight rather than by measure is sometimes adulterated with sugar of lead. He then questioned the patient, and learned that she was in the habit when at work of holding threads in her mouth, and that she had observed a sweet taste in some of the silk. This proved to be the source of the lead which had produced the characteristic symptons.

Original Essays

"Life is not to live, but to be well."—*Martial.*

COTTAGE HOSPITALS.

THEIR CONSTRUCTION.

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

SECOND PAPER.

Having now briefly glanced at some of the many services which may be rendered in the cause of health by Cottage Hospitals, we must linger no longer on the threshold of our inquiry, but pass on to the practical question how best to secure that the full harvest of social blessings may be reaped. It is evident that its success will largely depend on the situation and nature of the hospital, and we therefore deal, in the first place, with the manner of its construction.

The size of the hospital must be matter for grave consideration. From the extended observations of the last five-and-twenty years, it has come to be clearly understood that, in rural districts, the accommodation required in a village hospital may be arranged on the basis of allowing one bed to every thousand inhabitants, when the population does not exceed six thousand. If the number of people residing in the district is above the limit stated, the relative proportion of beds must be somewhat increased; for when population becomes larger, disease almost invariably undergoes augmentation at a greater rate.

It is otherwise, however, with an hospital situated in a manufacturing locality, with regard to which Mr. Burdett says:—"From experience gained in a large mining district, the proportion of three to four beds for each thousand *workmen or miners*, and then a calculation for their wives and persons employed in other ways, at the rate of one bed for each thousand persons, does not seen at all too high."

It may be that some cottage already built can be secured for the purpose of conversion into an hospital. If so, it must be dealt with as we shall afterwards indicate. Meanwhile we shall assume that a new edifice is to be erected.

The vast influence exerted by the position of an ordinary dwelling on the sanitary condition of its inmates is surpassed by the effects of locality upon the patients living in an hospital, and for this reason the site must be chosen with great care.

The soils best suited for building upon are those which are of a light and gravelly nature. But such cannot be obtained in every part of the country, and damp soils may be rendered fit for the purpose by careful draining and by the use of asphalte over the foundations, with provision for free ventilation underneath the ground-floor. Steep slopes are not well adapted for building upon, on account of the water which runs down towards the site of the hospital, and which tends to render it damp; but the brow of a gentle undulation is admirably suited to meet every requirement. Not only does such a position allow of perfect dryness of the foundations, but it also gives facilities for the removal of sewage by drains, if that should be the method adopted.

In most small towns and villages it is not difficult to find a stance large enough to afford a piece of open ground around the hospital. In passing we may bestow one word upon the laying out of a clear space,

"With green-spreading bushes and flowers blooming fair!"

through which the sick folk may wander during convales-

cence. The hospital grounds should always be laid out with pretty old-fashioned plants in which the cottager rejoices, and never tortured into assuming the too common Dutch aspect given by "ribbon-borders" and similar devices of the modern gardener.

In choosing the style of the building, respect must be entertained in regard to the fashion in vogue in the district. It would not look well to place the crow-stepped gable and cone-capped turret, which accord so well with the rocky hills of Scotland, upon the gentle slopes of Surrey. Nor should we care to see the quaint houses, with their chequered walls and lattice windows, which seem so home-like on the plains of Salop, amongst the deep valleys of Wales or the north. In the matter of style congruity must be studied, so that the hospital may unite with the buildings around it in architectural harmony.

The same thing may be said with reference to the materials used in the construction of the hospital. Brick walls and tiled roofs are to be employed when the dwellings in the neighbourhood are built of such materials; stone and slate when such is the custom of the district.

Whatever architectural style may be adopted, and irrespective of the size of the hospital, there can be no doubt that the "pavilion system" is the best for the purpose; in the plan, therefore, which we venture to submit as a rough guide in this matter, we shall follow this method.

The cubic space allowed within any hospital should not be less than 1,000 cubic feet per bed when there are several patients in the same ward. If there are only two or three persons, however, in one room, and that room part of a rural hospital surrounded by pure air, 900, 800, or even 700 cubic feet have been found to be sufficient, but in erecting a new building 1,000 cubic feet should be allowed for each patient. Dr. Swete says, "a room for three beds should not be less than 14 ft. by 16 ft., and 10 ft. in height." But in building a new hospital we are of opinion that a room intended for the reception of these patients would be better if it were 15 ft. by 20 ft., and at least 10 ft. high.

The ventilation must be most studiously attended to. Each ward or room in the hospital ought to have an open fire-place. In addition to cross-ventilation by means of the windows, the larger wards should be provided with Sherrington valves or Tobin shafts. We prefer the latter, and, if gas is present, would urge the use also, during winter, of Tait's Thermic Ventilator. By means of this invention, the air admitted is warmed by passing through a heated tube, while no fumes are allowed to enter the room, but are thrown out into the open air.

If the hospital is to be lighted by means of gas, it will be well to make use of Rickett's ventilating globe lights, or else to provide each gas-jet with a bottomless lantern to receive, and a tube to away the products of combustion.

If there are no waterworks bringing water to the district, it should be laid on from a good spring, for wells are not to be depended on. Even when there is a good water-supply it is well to supply means for collecting and storing rain-water for cleansing purposes.

Attached to each ward should be a water-closet, separated by a small lobby or passage (which must be cross-ventilated) from the ward. And a bath also should be provided for the ward. All the pipes belonging to the water-closets must be entirely separate from those of the baths, sinks, &c.

There may be no development of a drainage system, and for the purpose of getting rid of liquid sewage a cesspool under such circumstances, will have to be constructed. It should be as far from the building as possible, at least a yard below the surface of the ground, and thoroughly cemented so as to be perfectly watertight. It ought, moreover, to be of such a size as not to require very frequent emptying.

Each pipe conveying waste from sinks and baths should be provided with a proper bend, to prevent the backward passage of injurious gases; and the drain conveying the liquid sewage to the cesspool must be of well-jointed glazed stoneware pipes.

If there are no sewers in the locality, and, perhaps, even if there are, we would strongly recommend Moule's dry-earth system of removing excrementitious matter. Earth is an admirable absorbent of the gaseous products set free by the decomposition of animal substances. In using this material, care must be taken that the soil used must be carried off every day and dug into the ground without delay. One other caution we would give. Certain enthusiastic admirers of Moule's method recommend that earth which has been used should be dried and afterwards employed a second time; but these ardent champions of the dry-earth system are not unlike the fabled ostrich, for they close their eyes to the approach of danger from the possible spread of disease by the excreta.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

FOURTH PAPER.

The hydrocarbons (that is foods containing starch, sugar, &c.), were long believed to be the source from which a large part of the animal fat was made, and this theory was maintained by Liebig. Geese fed on grain become fat; bees form wax, which is a species of fat, from flowers. The herbs and roots eaten by the cow contain no butter, which, of course, is a fatty substance; and though suet, that is beef fat, exists in caseine; and lard (which is pigs' fat), exists in pigs, there is no beef suet in hay and fodder, and no lard in potatoes and roots eaten by swine. Therefore, Liebig said that the fat found in these animals is formed within them by non-nitrogenous substances yielding up their oxygen. The French chemist Dumas states, however, that the Indian corn or maize on which a goose is fed contains 9 per cent. of fatty matter, and on calculating the quantity consumed, he found more fat in it than was sufficient to explain the increased weight of the goose and the subsequent careful and extensive observations of Boussingault confirmed his observations; therefore Leibig had to support his position, and made several very ingenious experiments on swine. He observed that to fatten three pigs in thirteen weeks 1,000 lb. of peas and 625 lb. of potatoes were necessary. These together contain 26 lb. of fat—21 lb. in the peas and 5 lb. in the potatoes. One fattened pig yields on an average 50 lb. to 55 lb. of fat; the three together giving from 150 lb. to 165 lb. Each pig before being fattened contains on an average 18 lb. of fat, that is, 54 lb. for the three. Now, if to these 54 lb. the 26 lb. of fat contained in the food be added, we get 80 lb.; and, if we subtract from the 150 lb. to 165 lb., the amount of fat the three animals yield, we find that 70 lb. to 85 lb. of fat to have been produced from the starch, &c., contained in the food. These experiments have been more recently confirmed by Messrs. Lawes & Gilbert, the well-known agriculturists and stock-keepers, who found that in fattening pigs the animals stored up in their bodies from 400 to 450 parts of fat for every 100 parts of fat in the food. It would seem, therefore, that the origin of fat in the living body is three-

fold: 1, it is derived, ready formed, from plants; 2, it is formed in the absence of oxygen or where oxygen is deficient by the deoxidation of starch, gum, and sugar which supply the oxygen needed; and (3) by decomposition of the albuminoids (or nitrogenous principles) eaten. But this last process has only lately been more fully inquired into.

Liebig's theory has been much contested during the last few years, and there are many objections to it. First, a direct transformation of hydrocarbons into fat has not been obtained either within or without the organism; and thus, although the two groups of the body have a certain number of products of common decomposition, such as acetic, butyric, carbonic acid, water, &c., it is difficult from a purely chemical point of view to conceive how this transformation is affected. On the other hand, the hydrocarbons, if taken alone, diminish the fat instead of increasing it, and if bees, for instance, produce wax, which is closely allied to fat, by feeding on sweet substances, it is because they eat albuminoids at the same time; for if albuminoids be withheld from them they can no longer form wax.

How is this influence of hydrocarbons upon the formation of fat to be explained? Modern researches tend to show that they do not *directly* contribute to the formation of fat but *indirectly*, as they are more oxidisable food stuffs, and prevent the fat produced by the changes in the albuminoids from being oxidised.

The production of fat at the expense of the albuminoids is generally accepted nowadays by physiologists. In Roquefort cheese a formation of fat occurs at the expense of the caseine; and milk exposed to the air also undergoes similar changes. In animals giving suck, nitrogenous food augments the quantity of fat in the milk, whilst the fat is diminished by a fatty or starchy alimentation, so that it would appear more than probable that this transformation is produced physiologically in the organism. Pettenkofer and Voit have observed that on a meat diet all the nitrogen reappears in the excretions; but this is not the case with the carbons, which remain in part in the organism, and probably form a portion of the body-weight. There is, therefore, in the formation of fat a splitting up of the albuminoids into fatty and nitrogenous principles, and these latter only are eliminated in proportion to the decomposition. It has yet, however, to be solved whether this reaction occurs in the albuminoids of the tissues or of those in the food.

From what has been said it would appear that the question of the production of fat in the body is due to two sources: 1, the food eaten; and 2, the direct or indirect action of the albuminoids taken with the food. The production of fat at the expense of the albuminoids is an important matter from a practical point of view, and the fat thus formed, being very oxidisable, would be destroyed by internal combustion if a new and important condition did not intervene to prevent it. This is brought about by the hydrocarbons eaten attracting the oxygen, and by their oxidation preventing that process in the newly-formed fat which then accumulates in the tissues. Everything which diminishes this internal oxidation, such as want of exercise and certain affections of the lungs, will favour the production of fat. If the views just stated were all that is known on the subject, there would be a sufficient reason for the Banting diet, for all that would be necessary to combat obesity would be—first, to suppress the eating of fatty or oily materials; secondly, to increase internal oxidation, chiefly by muscular exercise (which Banting does not appear strongly to recommend, and therefore it can scarcely be called a part of the Harvey-Banting regimen); thirdly, to deprive the oxygen of the blood of highly oxidisable foods because this oxygen, in proportion as it is supplied, prevents the formation of fat by the splitting up of albuminoids, and therefore the hydrocarbons should be almost entirely suppressed. But I shall presently show that experience has proved to me that such a rigid restriction is not necessary.

We come next to the consideration of the factors which play the chief *rôle* in the production of corpulence—*i.e.*, to the study of the *causes* of obesity or excessive fatness.

The Adulteration of Milk.—From the annual reports for last year of the public analysts appointed by the Local Government Board, under the Acts in force against the adulteration of food, it appears that milk has again been found, as in previous years, to be the article of diet most frequently adulterated. It also appears that the milk-supply of London is, on the whole, less reliable than that of the country generally. The percentage of samples of milk found to be adulterated, as compared with the whole number of samples examined, was 19·6 for England and Wales, but for the metropolis it was as high as 24·5, while in certain districts of London more than half the samples were condemned. This bad pre-eminence was obtained by the City and Bethnal Green, while in Camberwell and St. Pancras more than one-third of the samples tested were found to be sophisticated. Of the largest provincial towns, Birmingham is still, as in former years, the worst in respect to its milk-supply. In most places, water was the adulterant. The experience of many epidemics of zymotics has proved that this is a most dangerous admixture, when the water is impure and contaminated with specific germs. In Liverpool, starch and flour-paste have been detected in milk, and, at Reading, turmeric was used to give a false appearance of richness. Grave complaints are made by many public analysts of the inadequacy of the penalties imposed by magistrates on convicted milk-adulterators, and the analyst for the City of London reports that prosecutions have been abandoned in his district on this account.—*British Medical Journal.*

The Greek Sponge-Fisheries. — The Greek sponge-fisheries have been very much developed within the last two years, and at the present time there are 723 boats, 183 of which are provided with diving-bells, employed in this business. These boats, which carry from five to seven men, nearly all belong to the ports of Hydra, Egina, Cranidi, Hermoine, and Trikeri. The fishing season commences in April and ends in August, the boats which are provided with diving-bells going as far to sea as Tunis and Tripoli, while the others do not go beyond the coast of Greece and Crete. The value of the sponges taken during the past season is put at £96,000, nearly half of which is credited to the Hydra boats, while those from Egina took about £27,000 worth of the remainder.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

ON BRITISH MALE COSTUME IN THE NINETEENTH CENTURY.

By Edward Houghton, B.A., M.D., &c.

(IN TWO PARTS—PART FIRST.)

Without going the length of adopting the views expressed by the late Thomas Carlyle in his "Sartor Resartus" (in which he utterly condemns modern European costume), I may be permitted to indulge in the Englishman's privilege of grumbling, even if there be no hope of reform in this direction for a century or so. Carlyle, as well as I recollect, compares the modern coat to a sack for the trunk of the body, with two smaller sacks for the side members. Much the same might be said of those nether continuations, to which it is said certain members of the female sex are now aspiring. For equestrian purposes, just and sufficient reasons may, perhaps, be given for ladies using the said garments; whilst loose knickerbockers (made to hang over and conceal the fastening at the knee) appear to fulfil all reasonable requirements of comfort and decency, when a skirt of even scanty dimensions is superadded. But, for ordinary use, it may well be doubted whether the long, tight trousers of modern fashionable society are calculated (in any great degree) to promote the comfort, cleanliness, or modesty of either sex. What, for instance, can be said in favour of a mode of fastening clothing in which no provision is made to guard against possible disarrangement (arising from age or infirmity)?

The difficulty of reforming costume certainly does not proceed from a want of imagination or skill on the part of those who have to do with such matters: though, no doubt, certain grotesque suggestions have been made, which make ordinary folk inclined to say that, "after all, we might be much worse off if we once allow new ideas to take root amongst us." This conservative instinct unquestionably has its uses, and serves to prevent ill-considered plans from being hastily adopted. But when it is carried to the length of denying the wisdom of any change in order to prevent foolish changes, it becomes incoherent and irrational, and endeavours to substitute clamour and ridicule for an appeal to reason and common sense. He that will not reason is a bigot,—he that cannot reason is a fool, and he that dares not reason is a slave!

Here is the true explanation of social tyrannies of all kinds. We are first bigots, next fools, and finally slaves. But it needs the quickened apprehension which comes from freedom only to know that every slave is but a tyrant in embryo, "which, hatched, would, as his kind, prove mischievous." Our difficulty in dress reform (as in all other reforms) is a moral one, concerning which we ought to pray that "the eyes of our understanding may be enlightened." If man had not such an inveterate tendency to persecute difference of opinion in social matters, reform would take care of itself; for those inventions which were of proved utility would gradually be adopted, whilst mere eccentricity would be too expensive and troublesome to become a matter of commercial speculation. But, it may be said, this is already the case, and "practically people can wear just what they like." Perhaps there are certain classes who can do so; but it is notorious that comparatively few can brave the social penalties to which they would be subjected, in England, without finding out that the game was not worth the candle.

Perhaps it is a result of our habit of "honouring the weaker vessel," that fundamental changes of fashion have been so marked in women during the last quarter of a century; whilst the tendency in male costume is, on the contrary, towards an ever-increasing grimness, ugliness, sameness, and discomfort. Lecturers have from time to time gone about carping at female eccentricities, and dishing up afresh the old woodcuts of popular physiologists, until the constant piling-up of the agony defeats its own object; especially as women find that they have, on an average, just as good health as men, enjoy life a great deal more, and also attain to greater longevity, notwithstanding the wise shakings of the head, and the anatomical plates (more or less accurate) with which they are now familiar. The truth is that if any man was to adopt a becoming and inexpensive dress in England, and one which could be readily cleansed without injury, he would probably be denied the means of earning his bread in any rank above the level of a crossing-sweeper; and even then he would have a hard time of it. There is apparently no hope of reform in England until other nations have first given the stamp of general approval to some kind of costume likely to be useful in a temperate climate, and which climate is, moreover, liable to sudden changes, both thermal and hygrometric. What is not a little remarkable, however, is that it has not always been so in England; but that in the Elizabethan period a striking improvement took place in male costume, both in England and the Netherlands, as though to indicate that the galaxy of talent which then appeared in science, art, and literature demanded a corresponding outward and visible sign of the nobler humanity within, which was not only covered, but adorned, by comfortable and becoming apparel; which was also conducive to purity of mind and body, without infringing upon dignity or involving an unreasonable amount of trouble.

True, there were certain particulars which were objectionable, as its wearing of stiff ruffs, &c., when in full dress; but these were only the accidents of the costume, and did not form its principal feature; I therefore only mention this period *en passant*, and not with a view of copying it in the details of its ordinary dress. In good truth, I have no pet theory of my own, and only ask for men that liberty of action which women have already attained to, viz, that they may wear anything in reason which they find suitable, without being visited with social penalties for so doing. It is only needful to compare modern female costume in England with that of any former period whatever, in order to see the incomparable superiority of the present average modes over the past, not only in appearance but in general suitability. There is, in fact, such a variety of style that every assemblage of ladies is now rendered much more attractive from this fact alone. And, however much we may condemn some costumes which are the outcome of this liberty, we should remember that, after all, we must pay some price for so valuable a possession; and it is not altogether inexpedient that folly should be allowed to hang out its sign as a warning beacon light, declaring that there is neither head nor heart to be had within.

Restoring the Finish of Leather.—Leather may be restored in colour, if not too far gone, by a slight application of oil. If this is not effectual, put on blacking, let it dry, brush it off, and go over it again very lightly with oil. If very brown, black thoroughly and oil it afterwards, giving it a final dressing of dissolved gum tragacanth.

The Body and its Structure

"The proper study of mankind is man."—*Pope.*
"What a piece of work is a man!"—*Shakespere.*

NO. XXIII.—SOME CURIOUS MOVEMENTS.

By A. J. Manson.

When a thin film of blood is placed under the microscope, it is seen to consist of a fluid as clear as water, in which float an immense number of small bodies, named the *blood-globules* or *blood-corpuscles.* The fluid part of the blood is named the *plasma* or *serum;* and as this fluid is of clear character, it follows that the colour of blood is really due to the corpuscles which float in it. These globules are so numerous, in other words, that to the naked eye they cause the blood to present a red appearance. In man, the red-globules measure each about the 1-3200th of an inch in diameter. The microscope thus really enables us to see in between the globules that float in the blood, and to distinguish the clear fluid in which they float.

In addition to the red globules of the blood, *white globules* exist. These latter are somewhat larger than the red ones, and measure, in man, from the 1-3200th to the 1-1600th of an inch across. They are less numerous in health than the red globules; about one white globule existing to 500 or 600 red. Chemically speaking, each white globule is a little mass of living matter or *protoplasm.* It has a central particle, or *nucleus*, which the red ones ordinarily want, and, indeed, the red globules are believed to represent the central particles (or *nuclei*) of the white ones, set free and coloured. When we study these white globules attentively, a curious phenomenon is observed. They may be seen under special circumstances to alter their shape and to exhibit independent movements similar to those seen in the little animalcule known as the *Amœba.* This animalcule consists of a minute speck of living *protoplasm.* It flows from one shape to another and engulphs food-particles by throwing its soft body around them. When the white globules of the blood are watched, their movements so closely resemble those of the *Amœba*, that they have been called *Amœboid* movements; and it may be said that such a mode of motion in these globules forms one of the most interesting and curious facts of physiological study.

As shown in Figure 1, a white globule may be seen to exhibit a constant change of shape, when the film of blood under the microscope is maintained at the temperature which is natural to the blood as it circulates in the body. It is seen slowly to contract and expand; to alter its shape, and thus to make its way across the field of the microscope. The various shapes it may assume are shown in the illustration. This power of movement, it should be borne in mind, is natural and proper to the globule. In life, and as they exist in countless numbers in the blood-vessels, these changes of shape proceed incessantly. Nor is this all. As the *Amœba* itself receives food-particles, so a white blood-corpuscle may be seen to receive and absorb particles of any colouring matter which is brought in contact with it, and, like the *Amœba*, these globules may divide in two, each particle becoming a new corpuscle.

In 1846, Dr. Augustus Waller announced the fact that both red and white blood globules could pass bodily through the walls of the minute blood-vessels of the tissues; but it is the white globules which appear to accomplish this feat as a phase of their natural life. These little masses of living protoplasm insinuate themselves through the wall of the vessel by a process which has been thoroughly studied. Dr. Burdon Sanderson remarks that 'a blood-vessel is itself a soft vital tube, such as offers no impediment to the passage through it of a mass of soft living matter. It is thus curious to think that a human body harbours millions of minute living specks in the shape of white blood corpuscles, each of which possesses a life and vitality of its own independent of the larger life of the body itself. The discovery that these corpuscles can thus migrate from place to place within the living frame, serves to explain their occurrence in situations which physiologists might otherwise regard as of unnatural and unusual kind.

Closely related in some respects to the movements of the blood-globules are the motions of *cilia.* When the lining membrane of the windpipe and bronchial tubes of the lungs

Fig. 1.—Movements of a White Blood-globule.

is examined, or when we look at the gills of the oyster or muscle, under a high power of the microscope, we notice that the cells which compose these structures are provided at their free edges each with a fringe of delicate processes, resembling fine hairs in appearance. These processes are the *cilia.* They vary in number from ten to thirty on each cell. Seen in the living state, they are noted to be in constant movement; the cilia waving backwards and forwards in such a manner as to give the impression to the observer's eye of the waves that pass over a field of corn disturbed by the wind, or the continuous succession of the waves that roll inwards, and apparently disappear on the sea-beach. The movements of cilia are entirely independent of the will and of the nervous system at large. They continue their movements for hours after death, or after removal from the body, when they are kept moist; and a single *cilium* thus comes to represent in itself a veritable apparatus whose movement is of automatic kind.

In length, the cilia vary from the 1-5000th to the 1-320th of an inch. Our illustration (Fig. 2) shows cilia

Fig. 2.—Ciliated Cells.

borne on the cells of the mouth of the frog in the left-hand figure, while those of the lining membrane of the human nose are shown on the right. Wherever cilia are developed, it is evident their function is that of creating currents in air or in the fluids amidst which they are placed. They thus serve in the windpipe and lungs to waft upwards to the mouth the moisture which otherwise would accumulate in the air-passages, while in the gills of the oyster or mussel, their use is that of sweeping currents of water into the shell for breathing-purposes, and for wafting out of the shell the water which has served its end in the economy of shellfish life. In the frog, the cilia contract about twelve times per second when they are in full vigour; and we know that, like the animal body of which they form part, cilia consume oxygen gas as a condition of their activity.

Regarding the *causes* of ciliary action, it may be added

that as each *cilium* is a minute thread of living matter or *protoplasm*, and as this substance exhibits "contractility," or the power of shortening itself as one of its primary qualities, the movements of cilia must be referred simply to their inherent power of contraction. Each cilium merely bends, however; it does not grow shorter, as does a fibre of muscle. Possibly a band of contracting substance runs along each side of the cilium, and by the alternate action of such bands, the little thread is made to bend and to rise again to its erect position. Whatever may be the exact method of the action of the cilia, the fact of their incessant action remains a prominent feature of the curious life that rolls onwards through the tissues of living beings. And that life is none the less interesting, but rather the more so, because its details are carried out in the field of the infinitely small and amongst the microscopic units that make up, by their collective existence, the life of the body as a whole.

CHINESE AND SURGERY.—The Chinese stand surgical interference wonderfully well, and submit to painful operations in a manner wonderful to witness, thus resembling our Indians. Only in major cases is an anæsthetic administered. Once consent is obtained, confidence is absolute, and they are passive in the hands of the surgeon. During the past autumn (1880) excision of the ribs has been frequent, as disease of these bones appears to follow the famine fever in many cases. The Chinese, as a rule, object to surgical treatment in cold weather, no doubt owing to the fact that they have to furnish their own bedding and pay for warming the bed occupied. It was judged best in building the hospital in question (Tien Tsin) to follow the native architecture as nearly as practicable, to allay all prejudice possible, and thus the beds are constructed of brick, with a fire-place beneath, in which straw, hay, and brush are burned for heating. Thus each patient has his own fire, and his food is cooked by it in utensils furnished by himself. A most extraordinary custom is carried out by this strange people, which I have not noticed in any of the books or reports concerning them. As soon as it is judged a person is dying, he or she is removed from the house to the open air, no matter what the weather may be. Should death take place unexpectedly within a residence, the inmates depart immediately, as they have the utmost horror of the ghost of the defunct. In the general hospital it is absolutely necessary to remove all moribunds, for if a patient perishes in a ward, the occupants all take flight, and no one will knowingly sleep in the room afterwards. This circumstance often causes great embarrassment to the surgeons.

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MEDICAL AND SANITARY EXHIBITION, 1881.—AWARD OF MERIT.—DIABETES. VAN ABBOTT'S GLUTEN BREAD, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. VAN ABBOTT, 5, Princes-street, Cavendish-square, W.—DELICATE CHILDREN AND ADULTS SUFFERING FROM NERVOUS DEPRESSION. VAN ABBOTT'S HYPOPHOSPHITE OF LIME BISCUITS, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—VAN ABBOTT, 5, Princes-street, Cavendish-square.—[ADVT.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

SHORTSIGHTEDNESS: ITS CAUSES AND PREVENTION.

BY HENRY POWER, M.B.LOND., F.R.C.S.ENG.

(From the *Lancet*.)

THERE can be no question that the Germans are particularly liable to myopia. One of their own nation has said that at a great International Congress he had no hesitation in addressing, in German, a man wearing strong concave glasses, because he was certain he should meet with a brother, proving incidentally that the disease is rare in other nations. It is reasonable to inquire, then, what are the special conditions to which Germans are exposed that render this defect of vision so remarkably common amongst them. The answer is, that up to a very recent period the Germans began to work their children at a very early age; that they gave them long and severe lessons, many of which had to be learnt at night; and that the amount of light supplied to them was insufficient—in other words, that with imperfect illumination they made great demands upon the accommodation of their children's eyes, and that this strain was augmented by the bad type and paper that were in use for school-books. Each of these points deserves consideration, and it may be remarked that the Germans are fully alive to the great, and indeed national, importance of the subject. They have discussed the whole matter in a thoroughly scientific spirit, and we are indebted to them for numerous suggestions, which should be adopted in our schools if we wish to preserve the eyes of our posterity in a healthy condition.

The amount of light, both of day and artificial, that is supplied in schools is a matter of great importance, for it is acknowledged on all hands that the feebler the light the closer is the object instinctively brought to the observer to be recognised, and amongst the various suggestions of a practical nature that have been made is one by Hoffmann, of Wiesbaden, that in every schoolroom a set of Snellen's test types should be suspended, and as soon as they are no longer legible by the healthy at a normal distance the school should close. In school buildings the windows should, if possible, look to the south or east, a much greater amount of light entering with equal window space from those directions, especially in the earlier hours of the day, than from the north, whilst type of a given size is read at a much greater distance with south than with north light. Cohn and Javal alike think that it is almost impossible to get too much light in a schoolroom, the latter maintaining that there should be sufficient light in the darkest part of the room to read easily and well even on dark days. The size of the window must manifestly exert a great influence upon the amount of light admitted, and Cohn has laid down the rule that there should be at least one square foot of window pane for every five square feet of flooring, and in some recent Parisian models there is actually one foot of window to each foot of flooring. The height of the window from the floor is of importance, since a room is always dark with high windows, owing to the obliquity of the entering rays and the loss by reflection; the sill of the window should not be lower than one foot from the ground. It is acknowledged that the light should enter from the left hand, since it enables the letter that has just been formed in writing to be distinctly seen; whereas, if the light enter

from the right, the last written letters are in the dark. The total area being the same, three windows are better than two, for since the illumination obtained from a given light diminishes as the square of the distance, more light will be obtained in the remoter parts of the room with three than with two lights.

The form of the desks and school furniture is a point that has been almost entirely neglected in England. In many schools they are just what have been run up by the village carpenter in the simplest and most solid form compatible with cheapness that can be conceived. The slope of the table is of importance. If a book be placed vertically in front of us, we can read well, and no inclination of the head is required. If it be placed at such an inclination as to form an angle of 45° with the horizon, we can still, by turning the eyes down, read well without inclining the head; but if the book is placed horizontally, the head is naturally bent downwards to relieve the exertion of turning the eyes strongly downwards, and this tends to congest the vessels of the head. Hence the desk should be inclined, and not flat; but an angle of 45° would be too much, the books, &c., would slide off. A rise of two inches for each twelve inches of table breadth is sufficient. Fahrner considers that the first movement of the child in leaving the normal position consists in inclining his head forward and to the left, and that this apparently unimportant movement is the root of the whole evil; for it in the first place causes the centre of gravity of the head to fall in front of the vertebral column. The muscles of the neck are consequently called into play; they soon, however, become fatigued, and transfer the work to the muscles of the back, and thus at the expiration of a few minutes the head sinks upon the left arm, and the eyes are brought into very close proximity with the paper. All physicians are now agreed that the desk should be a little higher than the elbows when hanging naturally, and that the size of the child or youth should be taken into consideration.

Teeth in Old Age.—Some old folks cut their teeth when far advanced towards centenarianism. An old woman named Dillon, living near Castlerea, in Ireland, cut an incisive tooth in the lower jaw when seventy-five years old; it confirmed a strange hallucination with which she had long been possessed—that she had been dead, and was come to life again, with the usual infantine career of teething, &c. Mrs. Fussell, living at Acton about a dozen years ago, cut an entirely new set of teeth when about eighty years old, after having been many years toothless. In 1732, Margaret White, of Kirkcaldy, in Scotland, cut eight new teeth in the seventy-eighth year of her age, thus winding up a toothless period of many years. Mrs. Page, a dame of Southwark, after being toothless from the time she was seventy till she was ninety years of age, cut several new teeth.

The Hygienic Protection of Paris Children.—By recent decrees it is forbidden to employ boys under sixteen years old, or girls under eighteen, to furnish the power for hand-looms. Boys between twelve and fourteen years of age, and girls between twelve and sixteen, must not be made to draw loads on the highways; but this is allowed on the level floors of manufactories, &c., provided the load and the vehicle together do not weigh more than 100 kilogrammes. Boys only, when over fourteen years old, may be employed to haul loads on the highway, provided the load and vehicle together do not exceed 100 kilogrammes in weight. Tilers and plumbers are forbidden to employ children on roofs.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

VENTILATION AND SANITARY FALLACIES.

By Dr. Thomas J. Hutchinson, F.R.G.S.I.

(*Corr. Mem. of Anthropological Society at Florence, &c., &c.*)

VENTILATION IN SLEEPING-ROOMS.

Besides what we have learned from the bees, the indispensable necessity for fresh air during our sleeping hours has been demonstrated by Florence Nightingale during her Crimean experiences, and is set forth in her "Notes on Nursing." It may be further verified by the following facts:—If two persons are to occupy the same bedroom during a night, let them step upon weighing scales, as they are about to retire to bed, and then again do the same thing in the morning. They will find their actual weight to be for each at least a pound less at the latter period. Frequently there will be a loss of two or more pounds, and the average loss throughout the year will be more than one pound per night—that is, during the night there is a loss of one pound of matter, which has gone off from their bodies, partly from their lungs, and partly through the pores of the skin. The escaped article is carbonic acid, and decayed animal matter, or poisonous exhalation. This is suffused through the air in parts, and in parts absorbed by the bed-clothes. Now, if a single ounce of cotton be burned in a room, it will so completely saturate the chamber with smoke that one can hardly breathe, although there is but a single ounce of foreign matter in the air. Should an ounce of cotton be burned every half-hour during the night, the air would be kept continually saturated with smoke, unless there could be an open door or window for it to escape. But the sixteen ounces of smoke thus formed by the cotton burning are far less poisonous than the sixteen ounces of exhalations from the lungs and bodies of two persons who have each lost a pound in weight during the eight hours of sleeping. For while the dry smoke is mainly taken into the lungs, the damp odours from the body are again absorbed into the lungs as well as into the pores of the skin. A little more thoughtfulness would impress upon every one the importance and necessity of having sleeping-rooms well ventilated. Air should be admitted in not only during the day, but whilst we are asleep. Another very important item of the health of our beds is that every morning, after getting up, the sheets, blankets, and other coverings should not be rearranged without being left about for a few hours. It would be a great advantage if they could be aired for that space of time. This may seem a trifle, but trifles make up the sum of our health, comfort, and existence.

SANITARY FALLACIES.

There is no greater fallacy than the opinion held by many—particularly the young, and strong, and vigorous—that winter, especially a sharp, frosty one, with plenty of ice and snow, is the most healthy season of the year. Very few persons seem to realise the facts, that cold is the condition of death, whilst heat is that of life. In warm as well as cold climates, it is our unconscious effort to maintain our bodily heat at a temperature of 98 degrees that wears us out. To this temperature, called "blood heat," every cubic inch of oxygen that serves to vitalise our blood must be raised by our own bodily heat, or life ceases.

Since in cold weather the maintenance of a sufficiently elevated bodily temperature becomes very often a difficulty too great for our strength, the advent of a severe winter is quite as much to be dreaded as the visitation of a pestilence. Besides this, children should not be sent out to walk of a morning before breakfast in a cold wind, especially with an empty stomach, as they get chilled, and it does the system a great deal of harm. A like rule should be observed in malarious countries, be they tropical or not, that on no urgency should children or grown-up people go out in the early morning without a cup of tea, coffee, or chocolate taken beforehand. For in tropical countries, more especially, the price of health is eternal vigilance.

As a well-known professor was one day walking near Aberdeen, he met an individual of weak intellect. "Pray," said the professor, "how long can a person live without brains?" "I dinna ken," replied Jimmy, scratching his head. "How auld are ye yourself?"

Rate of Digestion in Stomach.—According to A. Kietz, during the first hour of digestion lactic acid is not present in notable quantities, but the acid present is hydrochloric. The appearance, sooner or later, of free acid is dependent on the quantity and quality of the food, as well as on the idiosyncrasy of the individual.

Morphia v. Dog Poisoning.—An American M.D., writing to a Transatlantic contemporary, complains bitterly of dog poisoners, but says he has saved many of his dogs by hypodermic injections of morphia. He counsels every sportsman to keep a hypodermic syringe in his pocket, or close by, and with it two or three papers, each containing two grains of sulphate of morphia. When rigid back and intermittent spasms indicate disaster, without delay, dissolve the contents of a package in a teaspoon with a little water projected from the syringe, which can be warmed to dissolving point over a lamp or lighted match. Suck it up through the nozzle again, and insert the same through the skin into the loose tissue beneath it, raising up a fold for the purpose from the ribs or shoulder. If the dog is not very far gone, the entire contents of the stomach are instantly vomited, thus leaving only the amount of poison already absorbed to contend with; and the medicine, besides its first emetic effect, is one of the best antidotes, and will produce its full effect, whereas, if introduced by the stomach, would probably remain inert, owing to the general paralysis from the strychnine, this being almost the only poison employed, and the only article of access to the public that will have any certain action on dog, wolf, or others of the canine family.

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecturer on Anatomy in the Edinburgh Medical School.*)

THIRD PAPER.

(*Continued from* No. 26.)

CRICKET AND FOOTBALL.

We propose now to consider shortly some of the games and athletic exercises which require more violent exertion, and may take as examples cricket, football, rowing, fives, and athletic sports. Many others might have been added, but these will furnish us with sufficient text for what is wanted.

Cricket may be truly called the national game of England. It is played alike by rich and poor in every part of the country, and has been recognised as the standard summer game of the people from generation to generation. For the history of the game, and for the rules under which it is played, and for hints as to how best to learn it, our readers must refer to some of the many treatises on cricket which have from time to time been published. All that concerns us at present is to consider it from a health point of view, so far as that falls within our reach. We do not often hear of injuries from strains or falls among cricketers; and, although blows from the cricket-ball are occasionally serious, still the accidents, as compared with the numbers who play, have not been sufficiently numerous to occasion any anxiety or give any ground for suggesting alterations in the rules. The exercise afforded by it is excellent, although in the various movements required for batting, bowling, and fielding, the action of the left arm and left side of the chest is hardly enough brought out, the most of the work being done by the right side. Activity, quickness of hand and eye, coolness, and decision are required at every turn.

It is a drawback to the game in some ways that so many hours are required continuously for its matches. This prevents those whose spare time is limited from taking part in it. However, time is necessary for the proper playing of the game, and, therefore, when school-days are over, and long recreation hours not available, young men must, if need be, seek some form of exercise which can be taken in a shorter time. But, besides this so to speak necessary drawback, there are others which might easily be removed, but which are often obstacles to those whose purse is limited. Such deterrent expenses are the costly lunches to the opposing side, and the presents to the successful bowlers and batters, which are multiplied in some clubs to an unnecessary extent. It would be well if, in respect to lunch, the example of most of the Highland curling clubs could be followed, where, after a hard morning's play the laird and the ploughman, the minister and the banker's clerk, can enjoy their bread and cheese and beer together before starting again for the afternoon.

Cricket in itself is admirable. Let any unnecessary obstacle to it be removed, and we may trust that as long as it remains as it is—one of the symbols of manly, healthful exercise—it will keep an unbroken sway among our summer games.

If we turn our attention to football, we shall find more subject for discussion, for there is no doubt that a certain proportion of accidents do occur in the game, and

this leads many to doubt whether the game is not too rough, or at least whether some change in the rules might not be suggested which might lessen the risk of accidents. In considering the question, we must bear in mind that football is wanted for the winter months. It must be played, therefore, in weather which demands continuously active exertion from the players. In this respect it differs from the summer game of cricket, where the players can remain inactive after sharp exertion with little or no risk of chill. We must not forget, too, that in winter, when the light is short and work more pressing, it is desirable to have some form of exercise which does not occupy too much time, and we find that football fulfils both these conditions—in fact, the one follows from the other. Football is such that it can be played in all weathers, except when snow covers the ground or frost hardens it, and affords an exertion so continuous and severe that from an hour and a half to two hours is as long as any one cares for in a day. To these advantages we have this one—that the game provides for the exercise of a considerable number at one time. This also combined play is a necessity, and unselfishness is called out in addition to the manliness, pluck, and endurance which the activity of the game requires. Let us also remember that one of the special points is, that there is one ball which is the common object of attraction among all the players; and we may now begin to consider the question in reference to the accidents.

To put it briefly, we have a game for lads or young men in vigorous health and rejoicing in the active use of their muscles, played in weather which stimulates and requires an activity which, from the condition of things, is often chiefly expended by the players on each others' persons; can it be wondered if the exertion is at times misdirected, and strains and bruises result? How far these are a necessary accompaniment, or how far they may be diminished—how far even with them the gain in health and manliness to the large majority is compensated for by the injury to the few—are questions which are deserving of consideration.

It is well known to most people, but not familiar to all, that the term "Football" includes two games, which differ considerably in the way in which they are played. In the Rugby form the player is allowed to take the ball under his arm, and run with it towards his opponents' goal, while the other side may do their best to hold him, and take the ball out of his hands. In the Association Game no one except the goal-keeper is allowed to handle the ball under any pretence, all management of the ball being done by the feet alone. From these points of difference many rules are framed, so that the character of each game comes to be considerably different, and the aspect of each to a spectator is quite distinct. In the Rugby game the arms, shoulders, and chest are much exercised in the efforts to throw off opponents while a player is running with the ball, or while endeavouring to "collar" one who has already got it. Many tumbles are the result of these manœuvres, but they are more of wrestling fall than a complete throw, and are not nearly so heavy as they may at first seem. Tight scrimmages, too, are a peculiar feature of the Rugby game, and are the means by which the ball is brought into play again after a player has been running with it and has been "held." They consist of the forward players of each side wedging themselves together into a compact mass, and trying to push back their opponents, who are similarly arranged, the ball having previously been placed between them. After a few minutes' violent effort, one or other side usually gives way or the ball gets loose, in which case the scrimmage breaks up, and the game goes on as before.

Under the Association rules, on the contrary, since the players are not allowed to use their hands or arms, there is no wrestling, and tight scrimmages are never formed. Consequently the game is much more open and free, the ball being always on the move, as it is passed from one player to another. But while the wrestling falls do not occur, what we may call complete throws are more common, for now, when a player wishes to upset an opponent when both are making for the ball, he must do it by a direct charge, or by a combination of charge and shoulder throw, which often results in heavy falls at full length. Another point to be borne in mind is that since the ball may not be handled, efforts are often made to kick it while it is still in the air, and this brings the foot of the kicker frequently into dangerous proximity with an opponent's body, should he be in the way. Fortunately, however, accidents from this cause do not often occur, although there is a risk of them.

Some time ago a writer published a book, entitled "What will my Boy be?" and a certain reviewer said of it, "If your boy turns out no better than your book, he'll be hanged." A lecturer in Kentucky has announced as his subject for a lecture, "What shall we do with our Girls?" How would it do to give them three square meals a day, make them wear clothing that fits them easily, keep "yellow-covered" books and papers from them, prevent them from hiding their foreheads with hair, and try to raise them to help their mothers in all household affairs until they are called to help their husbands? We merely suggest, and do not dogmatise.

The importance of careful and efficient ventilation of the rooms occupied by children can hardly be over-estimated. The air of a closed room soon loses its freshness, even when unoccupied. Chemically the proportion of oxygen may not be appreciably altered, but the more active, or ozonised, part of it is changed; innumerable particles are brought into contact with it which, if not "stealing and giving odours," may add what is imperceptibly injurious, and will certainly take away from it the quality of freshness. Movement of air through a room is a first essential of ventilation; then the quantity and rate of movement has to be considered, taking care that the temperature and other qualities are so preserved as to be both pleasant and wholesome.

Brain-Weight of Boys and Girls.—In the final result of the comparison of the two sexes in the human race, anatomical researches will form an important factor. Many anatomists have recognised this fact, and have instituted comparisons between the sexes from various points of view. M. Gustave le Bon reviews the work of M. Manouvrier and that of M. Budin, both of whom aver that "sex has no influence on brain-weight. With them the influence of sex is nothing more than the influence of height; and if the females, as a whole, exceed the males in brain-weight, it is simply because the weight of the body in the females is much below that of the males." M. le Bon puts the theory of his adversaries to the test in a very ingenious manner by comparing the brains of males and females having about the same weight. By this investigation it is shown that in the great majority of cases the male children surpass the females of the same weight in their cranial circumference. At the same age, height, and weight of body, the female brain is notably smaller than that of the male.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

VEGETABLE WOOL.—The *Moniteur des Fils et Tissus* calls attention to a description of vegetable wool called "Kapoc." It comes from Java, and a specimen is on view at the Amsterdam Exhibition. It arrives at Amsterdam in its leathery covering, being itself enveloped in the seeds. It is then freed from both, and is carded so as to make a very light mattress wool, worth about 8¾d. per pound. One of the houses engaged in this operation has made trials in spinning and dyeing this material, but the filaments are said to be like strings, and their industrial application consequently a matter of uncertainty.

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"HOW THE POOR IN LONDON LIVE."—Under this heading the *Echo* of Sept. 28, 1883, published a statement, from which we reproduce the following particulars:—"Out of 2,290 persons, living in consecutive houses at Bow-common, only 88 adults and 47 children attend any place of worship; while in one street, near Leicester-square, containing 246 families, only 12 are said to be represented in church or chapel. The condition of some of their homes is said to be 'pestilential.' To get into them you have to visit courts which the sun never penetrates, which are never visited by a breath of fresh air, and which never know the virtues of a drop of cleansing water. In one cellar was found, a father, mother, three children, and four pigs. In another room was a man ill with small-pox, his wife just recovering from her eighth confinement, and the children running about half-naked and covered with dirt. In an underground kitchen seven persons were found living, and a little child lying dead in the same room; while another apartment contained father, mother, and six children, two of them being ill with scarlet fever. Immorality is but the natural outcome of conditions like the above. The poverty of many, who strive to live honestly, is described as appalling. In St. George-in-the-East large numbers of women and children, some of the latter being only seven years of age, were employed in sack-making, for which they got a farthing each, while in one house a widow and her half-idiot daughter were found making palliasses at 1¾d. each. Another woman, who has a sick husband and child, was found employed at shirt finishing at 3d. a dozen, and by the utmost effort can only make 6d. a day, out of which she has to find her own thread!" These are, indeed, disquieting, and it is not too much to say discreditable, facts. Much has been done to discover, and either destroy or amend, conditions of life so deplorably insanitary, as those described by our contemporary, but it would seem that much more remains to be accomplished. It is manifestly impossible that the poor can live healthily or honestly in such habitations, and by such ill-paid labour as is represented above. It is well that the facts should be known, though they are not less humiliating than sickening. With all our boasted care for the health and happiness of the humbler classes of the population, we are clearly guilty of terrible neglect, or such things could not be. When will the Legislature have time to think of the pressing needs of domestic legislation and the real grievances that lie nearer home even than those of that most troubled and troublesome spot of earth—Ireland?—*Lancet.*

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A TEMPERANCE READER.

Drink and Strong Drink. A Series of Readings for Schools and Families. By BENJAMIN WARD RICHARDSON, M.D., &c. (London and Glasgow: W. Collins, Sons, & Co., Limited)

THE *raison d'être* of this little volume was a suggestion of Sir William Collins, of Glasgow, that Dr. Richardson should write a class book for the advanced young on the nature of alcohol. We can well understand the temptations which would beset many an unwise reformer, or a less learned writer than Dr. Richardson, to make capital out of such a topic; but throughout the pages of this Reader the author is always candid and everywhere scientific. Interspersed throughout the book is a vast amount of physiological and chemical knowledge, the acquisition of which by the pupil who reads this work will form no slight gain in education. There are one or two passages which, in deference to chemical authority of by no means slight kind, might have, with justice, been modified. The expression (p. 145) that alcohol "is a chemical substance, and distinct from a food," would almost lead the reader to suppose that a food is not a chemical substance. Again, it is somewhat stretching a point to declare that alcohol is not a food, seeing that diversity of opinion still exists on the point—we say this much, believing, ourselves, that Dr. Richardson is right. In a reading book intended for advanced pupils there is no need to enter into controversial matters. The volume will admirably serve its purpose as an exposition of the virtue and safety for the young which reside in habits of temperance and abstinence formed early in life.

A BOOK FOR NURSES.

Putnam's Handy Book Series—A Manual of Nursing, prepared for the Training School of Nurses, attached to Bellevue Hospital. (New York: G. Putnam's Sons.)

THIS is an excellent manual; admirable in its conception, and thoroughly carried out in its details. Every point which a nurse should know, from the observation of the sick, undressing a patient, to the conduct of special operations, is here fully treated, and described in language at once plain and forcible in its character. We have carefully perused the instructions and directions contained in this manual, and are able to accord to it the highest praise. The spirit of even the appendix reflects the thorough character of the book, as may be seen from the following quotations:—

IMPORTANT THINGS FOR EVERY NURSE TO REMEMBER WHEN SHE GOES TO PRIVATE CASES.—Remember to be extremely neat in dress; to have the hair smooth, and caps and aprons clean; a few drops of hartshorn in the water used for *daily* bathing will remove the disagreeable odours of warmth and perspiration.

Never speak of the symptoms of your patient in his presence, unless questioned by the doctor, whose orders you are always to obey *implicitly.*

Remember never to be a gossip or tattler, and "always to hold sacred the knowledge which, to a certain extent, you must obtain of the private affairs of your patient, and the household in which you nurse."

Try to give as little trouble to the servants as possible, and make them feel that you have come to help them in the extra work that sickness always brings.

Never contradict your patient, nor argue with him, nor let him see that you are annoyed about anything.

Never *whisper* in the sick room. If your patient be well enough,

and wishes you to talk to him, speak in a low, distinct voice, on cheerful subjects.

Write down the orders that the physician gives you as to time for giving the medicines, food, &c.

Give an account of your patient to the physician in as few words as possible.

Keep the room bright (unless the doctor *orders* it darkened).

Let the air be as pure as you can, airing it from outside, "as windows are made to open."

Keep everything in order, but without being fussy and bustling.

The only way to remove dust is to wipe everything with a damp cloth.

As an additional example of the thorough spirit in which this work has been planned and executed, we select the passages dealing with "faintness" and "foreign bodies" respectively. From these extracts, it will be seen that the nurse who is armed with this manual possesses a full and trustworthy guide to the treatment of emergencies :—

FAINTNESS.—In any case of faintness, the patient should be at once placed in a recumbent position, all tight clothing about the neck and chest be loosened, and a supply of fresh cold water secured. If there be only slight faintness, it may be all that is necessary to place the patient in a cold draught of air. Where there is complete loss of consciousness, water dashed on the face or chest, or applied by means of a wet towel, striking the palms of the hands and rubbing them rapidly, are good means of restoration. A plate may be dipped in hot water and placed over the stomach. Smelling-salts, or any preparation of ammonia, should not be used too persistently, as they are liable to injure the lining membrane of the respiratory passages.

FOREIGN BODIES.—When anything has lodged in the throat, causing choking or suffocation, a smart blow on the back between the shoulders will in many cases send the substance out of the mouth. Should this fail, hold up the body by the feet (in the case of a child) and let another person strike between the shoulders with the open hand. This process should only last for a moment. Look in the throat and see if the substance can be reached; seize hold of it with the thumb and finger, or a pair of blunt-pointed scissors, and pull it out. If there is only a small substance in the throat, causing a troublesome tickling cough, give bread, followed by a drink of water, and if this is not sufficient, give a little mustard and warm water as an emetic, and after vomiting there will probably be no further trouble.

In the Nose.—When any small article, as peas, beans, pebbles, &c., have been pushed into the nose, they may often be removed by snuff, or any other substance which will produce sneezing, being introduced into the opposite nostril, or by the use of a pair of forceps or blunt-pointed scissors, care being taken not to push the substance back into the throat. Peas and beans are the more dangerous, as they increase in size by the absorption of moisture.

In the Ear.—Insects in the ear are removed by plugging the external opening with a piece of cotton saturated with a solution of salt or vinegar, so as to prevent the admission of air. Then let the patient lie on the affected side, and press the hand firmly on the ear. After a few minutes the insect may be found imbedded in the cotton. Or lay the patient on the opposite side, and fill the ear with oil. A small stream of water from a syringe will often remove small bodies or sand. If any substance can be readily seized with the forceps, they may be used for this purpose; but very little force must be used, or the substance will be pushed still further in, rupturing the drum of the ear, and permanent deafness would be the result.

In the Eye.—For the removal of dirt, sand, &c., from the eye, it will often suffice to lift the upper lid away from the eye-ball by taking hold of the lashes, drawing it down over the lower lid, and allowing it to slide slowly back. Then wipe the edges with a handkerchief to remove the foreign body from the lashes. Or, take something hard, like a knitting-needle or pencil, and press it across the outside of the upper lid, then take hold of the lashes and make the lid turn over the pencil, and the substance will generally be seen sticking to the delicate membrane which lines the lids, when it can be gently washed or rubbed off.

COSTLY DOGS' FUNERALS.—The dog fever in America has got to such a high pitch that costly and elaborate funerals are given to pet dogs. This custom, *Forest and Stream* complains, is growing, is most disgusting. Common sense, it says, "should come to the rescue of such sickly sentimentality."

Sanitary Appliances, Etc.

HARD'S "FARINACEOUS FOOD."—We have subjected to a careful examination samples of this food which have been submitted to us. The "food" is a preparation containing a high percentage of the true flesh-forming and nutritive principles which are of such supreme importance in the nourishment of both invalids and children. Foods of this kind are often overloaded with starch or arrowroot, and for young infants starch in any form is a thoroughly indigestible food. Hard's "Food" may be safely commended to all as a safe and excellent means of preparing many admirable dishes and meals. In the cure and prevention of constipation and other digestive disorders, Hard's "Farinaceous Food" will be found invaluable.

BRAGG'S "CHARCOAL BISCUITS."—Few persons are probably aware of the valuable properties which charcoal holds in the *Materia Medica* of not only the physician, but of the household. It constitutes a form of the element *carbon*, and may be obtained either from wood or from the bones of animals. Mr. Bragg's "Charcoal Biscuits" are prepared from the purest vegetable charcoal, carefully selected, and freed from all extraneous matters. The value of charcoal has long been appreciated in diseases of the stomach and digestive tract generally. In cases of dyspepsia or indigestion, associated with foul breath, eructations of gases, and especially with acidity, the use of these biscuits is found to effect a cure. Where flatulence and oppression are experienced after food, the use of a biscuit or two relieves the disagreeable symptoms; the form of this biscuit being an agreeable fashion of administering the charcoal. Again, in cases in which there is reason to suspect the existence of stomach ulceration or of certain parasitic diseases of the organ, the use of charcoal biscuits is indicated. Charcoal has a wonderful power of absorbing deleterious gases into its pores, and when eaten under the circumstances above described, Bragg's "Biscuits" tend to destroy deleterious principles, and to sweeten the secretions on the perfection of which the digestive powers depend. In many of the stomach disorders incidental to childhood, the use of charcoal is found to be highly beneficial, and children readily take these biscuits when the administration of charcoal as a powder would be both disagreeable and difficult. The biscuits are prepared by Mr. Bragg, 14, Wigmore-street, London, W., and may be had of chemists and others in tins. The pure vegetable charcoal is also manufactured by Mr. Bragg, and is highly useful where the powder itself is required for administration.

THE PERFORATED TOILET PAPER AND HOLDER.—This is an ingenious invention whereby a roll of prepared paper for toilet use is suspended in a neat frame or holder, capable of being readily fixed on a wall or elsewhere. The paper is of good quality, and the price of this useful little domestic contrivance is extremely moderate. The holder and paper are manufactured by the Perforated Paper Company, 12, Long-lane, West Smithfield, London, E.C.

THE SWISS DAIRY COMPANY'S "PURE CONDENSED MILK."—This brand of condensed milk should take a high rank amongst the various products of the kind now in the market. The feature which commends this milk is the absence of the sugar with which such products are often loaded, to the detriment of the consumer. In the case of infants, the lack of sugar in milk is an important feature, the ordinary condensed milk, which contains sugar, tending to produce acidity. The "Baby Brand" of the Swiss Dairy Company appears, therefore, to present consumers with a pure article of its class. As such it may be recommended to the notice of all who consume condensed milk.

AN Irishman once received a doctor's bill. He looked it over carefully and said he had no objections to paying for the medicines; but the visits he would return.

AN association has been formed in Paris to protest against the eating of American lobster, on the ground that the animal is tortured by being put into the pot to boil while it is alive. The badge of membership is worn on the arm, and is in the form of a lobster holding in its claw a card on which is displayed the word, "Thanks."

"WELL, madam, how's your husband to-day?" "Doctor, he's no better." "Did you get the leeches?" "Yes, doctor, but he could only take three of them raw; I had to fry the rest."

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

[Several letters are unavoidably held over till next week.]

THE INFLUENCE OF STUDY ON THE LOSS OF THE TEETH.

Sir,—The following extract from *La Semaine Française* for November may be interesting to your readers :—"It would be impossible to deny the vast influence which the condition of the teeth exercises upon the general health and many stomachic affections. Dyspepsia, for instance, which is so often supposed to spring from remote causes, is, in reality, most frequently one result of swallowing imperfectly masticated food. Reaumur's experiments have long since proved that food cannot be digested without it is properly broken up. He caused some sheep to swallow tubes full of grass, saturated with saliva, but not chewed. Two days afterwards, examination showed that this food had not undergone any digestive change. Spallanzani still more conclusively proved this by causing a sheep to swallow two tubes—the one full of masticated, and the other of whole grass. The chewed grass was digested; the other remained unchanged.

"The state of the teeth not only affects one's bodily health, but also influences character. In one of his tales, Voltaire makes Doctor Sidrac say that people with sluggish livers are capable of the greatest crimes. This is, perhaps, going a little too far, but it must be conceded that such a habit of body strongly predisposes to hypochondria. In like manner a bad condition of the teeth, by the prolonged sufferings it occasions, and which are aggravated by the most trivial causes, ends by rendering the disposition morose, irritable, and thenceforward inclined to see only the dark side of everything.

"But if it be true that character can be influenced by the state of the teeth, is it also true—and this is the point I wish to bring forward—that the teeth rapidly decay under the influence of overwork? Two English doctors, Messrs. Leitherwood and Harlan, believe they have noticed that the teeth of those who devote themselves entirely to study undergo rapid changes, and that a period of rest retards the evil. They then put the further question: Are these occurrences attributable to an over-excited brain, whose excessive stimulation makes it assimilate to itself those phosphatic elements which would otherwise go to nourish the teeth? Or is this decay of the teeth due rather to a low state of health produced by overwork? It is well known that certain diseases of the nervous system, such as locomotor ataxy and infantine convulsions, have a very pronounced effect upon the teeth. It has further been proved that phosphorus is the special stimulant of the cerebral organ.

"Comparing together numerous facts which have been culled from different isolated observations, Messrs. Leitherwood, and Harlan find themselves compelled to admit that if the brain be over-stimulated by work the excess of phosphorus which it then consumes can only be gained at the expense of those organs which require this substance for their development—as, for instance, the bones and the teeth. This question is not new. It has already been studied in France by Doctor Lucas-Championnière. That learned practitioner has at different times verified similar facts. He advises that the studies of children shall be carefully watched, and so regulated as to be increased or lessened in accordance with the condition of their teeth. He also counsels those young persons who go in for competitive examinations or a university career to exercise the greatest watchfulness over their teeth, if they wish to preserve them."—I am, yours, &c.,

A. B.

QUERIES AND ANSWERS.

GENERAL.

Tedia.—Read Taylor's "Medical Jurisprudence."

I. B. O.—Not suitable for our purposes. Many thanks.

C. A. B.—Apply to Messrs. Churchill.

Examen.—The question of "pain," so far as we can see, does not begin until you reach the higher vertebrate animals. You surely cannot credit a frog with the pains of a man, or a fish with the pain of a dog. Warm blood alone, as well as the superior brain-power, must make a considerable difference in the nervous constitution of the animal.

Carib.—"Peyer's patches" in the intestine.

Ubique.—No; not at present. The idea is not new.

Simplex.—The aorta is the great main artery, which arises from the left ventricle of the heart. It carries the pure blood which has just come from the lungs.

Cecilia. See reply to "Tedia," above.

J. Anderson.—In "Leisure Time Studies," by Dr. Andrew Wilson, published by Chatto & Windus, 214, Piccadilly.

Taylor B.—An independent firm. No connection with that you name.

Exercise.—Maclaren's "Physical Training" should suit you.

Hygiene.—Dr. George Wilson's "Handbook of Hygiene," published by Churchill, should give you all the information you need. We intend soon to begin the publication of papers adapted for students preparing for the Science and Art Examinations in Hygiene. Parke's "Hygiene" should also be consulted by you.

E. J. Cox.—The exact functions discharged by the mineral constituents of the animal body are very imperfectly known. We know that chloride of sodium is necessary for the solution of the *Globulin* group of albuminous substances; *e.g.*, without this salt the contractile part of muscle would become solidified. The phosphate of sodium of the blood is a carrier of carbonic acid from the body or tissues to the lungs. Hydrochloric acid assists to digest proteids. Minerals are as essential as living matter—*why* they are so is only matter of speculation at present. They are never sources of *chemical energy*, this arising only from the oxidation (or other action) of organic substances. (See Gamgee's "Physiological Chemistry of the Animal Body." Macmillan.)

F. Hutley.—Cases for binding Vol. I. may be obtained from the publishers. Any bookbinder will place your numbers in one of our cases.

SANITARY.

J. Bell.—The "Pail" system is in operation at Glasgow, Nottingham, Leeds, Birmingham, Halifax (Goux system), Edinburgh (for ashes and house refuse), Manchester, Salford, &c. In Halifax the Goux System gives great satisfaction, the pails being lined with an absorbent medium, together with sulphate of iron or lime.

C. Otley.—1. The Moser "Dry Closet" is highly spoken of by Drs. Carpenter, Corfield, and others. Any kind of material may be used—ashes, dry earth, road-dust, sawdust, &c. 2. The *fosse mobile* is a tub, closed and placed on wheels, connected by pipes with the house-closets.

Alarmed.—No evidence to show that the milk of cows fed on sewage is in any way injurious. All the testimony points the other way.

B. Austin.—The adult gives off about 160 grains *carbon* per hour. Of *carbonic acid* one adult exhales about 16 cubic feet per twenty-four hours, or about ·6 cubic feet per hour.

Marine.—The Canal Boats Act is dated 1877.

Elgar.—Male births exceed female births in all countries, but in England and Wales the proportion of boys to girls is less than in any other country in Europe. The average male births to 100 female births are for France 106·4, Italy 107·1, Scotland 105·7, Ireland 105·6, England 103·9.

Thomas Jackson & Son.—Apply to the Secretary of the Society, 44, Berners-street, Oxford-street, London, W., for all details.

E. F. Bennett.—The best plan would be by means of a gas-stove. There are several "patents" which we think would suit you. Such a paper as the *Builder* contains advertisements of several, but a visit to a large ironmongery warehouse should result in your getting what you want. We know of two cases in which a gas-stove warms a lobby perfectly without smell.

W. H. Hamilton.—Let us know the locality you think of as suitable, and we will do our best to give you the information you require.

MEDICAL.

D. Mackay.—Let your friends have nothing to do with the Dispensary named. There are no qualified persons, so far as we can learn, connected with the place, which is a huge quack emporium; and there is a suspicious absence of names altogether, which

renders the manner of doing business that of the quack. Your friends should consult a qualified physician, and not spend their money on quackery. Kindly send us the other pamphlet, please. These "works of art" will come in handy one day.

JOCHIM.—Take a teaspoonful of Fellows' "Syrup of the Hypophosphites" in a wine-glassful of water thrice daily before meals. For the acne, try a wash (consisting of sulphate of zinc 20 grains; compound tincture of lavender 2 drachms; and water up to half a pint), after you have squeezed out the spots. A little smooth pumice-stone might be used to the face occasionally, and if this irritates, apply a little glycerine of starch. Don't tamper with arsenic.

URBICARIA.—Extreme care in diet is needful; a purge is indicate —"Æsculap" water is best—and Mindererus spirit may be taken (two teaspoonful doses in water every four hours) where the prostration is great. One particular article of diet may be the cause of the attacks. For allaying the itching, a lotion composed of one teaspoonful carbonate of soda to the pint of water will be found useful. This should be applied with a sponge several times a day. Slices of lemon rubbed on the parts also afford relief.

COLD BATH.—We do not think the cold has anything to do with your morning dip. Is your circulation good? We should advise you to look to your boots, and to ensure there is no obstruction to the circulation.

ANOTHER ANXIOUS INQUIRER was replied to in HEALTH, No. 31. If you will read the "Notices to Correspondents," you will see you cannot have your queries answered in the same week in which they are received.

D. E. POTTS.—Your case is simply one for care of your general health. Sleep on a hard mattress, use cold sponging each morning; take the tonic you name occasionally, and above all be cheerful. You do not say what you specially complain of beyond general weakness; but this latter should leave you in time. If not improved, write again, when we will recommend you a trustworthy physician.

MARIA KEMPTON.—Read our article on "Hay Fever," HEALTH, No. 16. Creosote might be used, and we would recommend you to try 10 drops to a pint of hot water, the steam being inhaled. A camphor inhalation might also prove useful. Ten drops of spirits of camphor, and 20 drops of rectified spirit are, in that case, to be added to the pint of hot water.

S. MARJORIBANKS.—Try applying a few drops tincture of steel daily to the wart. If this does not suffice, touch it with *glacial acetic acid* (be careful the acid does not touch the surrounding skin)—the common acetic acid is of no service. "Aromatic vinegar," carefully applied, will sometimes also remove warts.

H. WILSON H.—No need to be alarmed. Take the tonic recommended to "Jochim," above, and apply pure Vaseline for the itching. If not better, write again. No need for any "belt."

G. G.—The pain is probably due to digestive disturbance and flatulence. Attend carefully to your eating. Avoid vegetables for a time, and let your food be thoroughly light—soups, beef essence (Brand's), and such like. This alone may cure you. If the pain is very intense, we should recommend the insertion of a suppository containing ¼ grain of morphia. This will relieve you.

LONGFIELD.—1. Try "Friedrichshall" or "Æsculap" water as a mild aperient; let your diet, for a time, be as completely vegetable in nature as you can obtain; and if not improved under this dietetic treatment, write again. 2. No accounting for the irregular moustache-growth. Try the effect of trimming the weaker side frequently.

C. Y. R. O.—1. Take the tonic recommended to "Jochim" above. 2. For the irritation use a little plain Vaseline. 3. Try cold sponging to the parts each morning. 4. Look to your general health. Write again if not improved. No need for alarm, so far as we can see.

W. F. LONGMUIR.—A quack production. Have nothing to do with it. Read our papers on "How to Get Thin or Fat." The "cure" is a costly one, evidently, and although you are told what it is (or pretends to be), you cannot have it save through the proprietor. This is "an old stage trick." Save your money if you are wise.

UNFORTUNATE.—Don't waste your money on a man who drives a bargain for £10 with you for a cure. That is the essence of quackery. See advice to "D. E. Potts" above, and take the tonic recommended to "Jochim" in present number of HEALTH. You are not in ill-health, and with care will become quite well.

K. O. E.—1. No; don't use dumb-bells. They will likely increase the feeling, which is purely nervous, and will only leave you when your health is thoroughly established. Send us details of health, habits, &c. 2. A symptom of indigestion. Try the effect of rest after food, and a little "Pepsine" with your meals.

RECRUIT.—We think you should attend firstly to the state of your digestive system. A little "Æsculap" or "Friedrichshall" water occasionally in the morning should do you good. For the pains, try hot salt baths, and let your food be very light and nourishing for a time—soups, milk, fish, &c., but no vegetables. Yours is a case not for drugs, but for regulation of diet.

A NERVOUS ONE.—Your case seems to be one either of constitutional nervousness or of nervousness depending on ill-health. If the first, more frequent public appearances should modify your sensations. As to the second, we can form no opinion, as you do not give any details. You might meanwhile try the tonic recommended to "Jochim" above as a nervine stimulant.

A. BUTLER.—The inhalation treatment should do you good. Try ten drops tincture of iodine (or of creosote) to the pint of hot water, and inhale the steam arising therefrom. The following will also do you good:— Carbonate of ammonia, half a drachm; spirit of chloroform, one and a half drachms; infusion of senega to make up eight ounces. Two tablespoonfuls every four hours.

A. S. H. W.—Try the tonic recommended to "Jochim" above, and let us hear how you are in a fortnight's time.

GRATEFUL.—1. Avoid chills and heated rooms. Try cold sponging in the morning, if you have sufficient reaction. 2. Learn to open the eyes under water, as you plunge your face into a basin of cold water. Bathe them also at night with a lotion of alum, made by dissolving three grains of alum in an ounce of distilled water.

PODAGRA.—Try soap plaster, spread on kid or wash-leather, for a time. Painting with tincture of iodine should also do good. Messrs. Dowie and Marshall should certainly be consulted. They have had a large experience in such cases as yours.

A. E. J.—The hair-trouble is a result of the weak health. Use Rowlands' "Macassar Oil" night and morning (well rubbed in), as an application. But you must look to your general health. You wash your head much too frequently.

WINTER.—See to your boots, that they do not constrict your ankles, and thus affect the circulation in your feet. Wash the feet night and morning in water in which bicarbonate of soda has been dissolved. Attend specially to your socks, and wear light ones for a time.

AUNTIE.—In all probability the child has a weakly constitution. We should strongly advise you to begin at once to give her cod-liver oil, with the syrup of iodide of iron added. This is indicated by the symptoms. Removal to the sea-side might also do good; but the cod-liver oil and iron are necessities. No local treatment will be of any avail without them. Use Condy's "Fluid" and water for cleanliness' sake.

HERBERT.—Take the tonic recommended to "Jochim" in present number of HEALTH, and don't be alarmed about yourself. The secretion is not what you suppose it to be. Continue the cold sponging daily, along with the tonic, and have no fear for the future. Write again, if not relieved.

QUÆRE.—We cannot advise you to consult the person you name, because we know nothing of his treatment, and because we do not regard electricity as at all adapted for your case. We should recommend you to wear a suspensory bandage; to use cold sponging in the morning. You need not fear "atrophy"; but if the veins cause any severe annoyance, a simple surgical operation will be necessary.

DIM SIGHT.—1. Use camphorated chalk. We do not know the powder you name. "Quinine Tooth Powder," properly made, is good. 2. Rowlands' "Macassar Oil" is a safe oil, and, used along with a moderately hard brush, will prevent dandriff. You should not allow your hair to become dry, but use a little oil each morning. 3. Exercise is the safest remedy—walking (with due attention to nourishment) should aid you in your endeavour to strengthen your legs.

MUSICAL.—Your question is a difficult one to decide, because much depends on individual temperament, amount of excretion by lungs, skin, and kidneys, &c. The man would undoubtedly be heavier after supper, because he has received so much new matter into his stomach. Next morning he would not be so heavy—all night long his heart and lungs, for example, have been at work, and this work is always accompanied by waste; while the skin, lungs, and kidneys have been getting rid of waste products. The probability is, that whatever he ate at night, he would be of his normal or ordinary weight in the morning.

M. P.—1. Use injections of Condy's "Fluid" (1 to 10 of water) for the nose. Give cod-liver oil, thrice daily, with syrup of the iodide of iron added (see also advice to "Felix"); and try the effect of a change to the seaside. The throat might also be gargled with a lotion made of biborate of soda, 1 drachm; and glycerine, 2 oz. The nose trouble is constitutional, and will not be cured without the cod oil and iron. 2. Depends on some peculiarity of constitution. Try the effect of fifteen drops *Fer Bravais* (or Wyeth's "Dialysed Iron") thrice daily for a week or so, and let us hear the result. Stop the quinine and iron.

KATINKA.—You should have an elastic stocking accurately fitted

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to your ankle by a surgical instrument maker. This will give the needful support for a time until it is strengthened.

W. S. Humphrey.—We pity you, because you are thoroughly nervous over what need not trouble you at all. You are, by your own account, perfectly healthy, and yet you worry yourself over shadows. You need no medicine save perhaps a tonic, such as that recommended to "Jochim," in present number of Health. Use cold sponging each morning, and be cheerful. Don't brood over your fancied ailments, above all.

J. P.—The secretion you name is *not* what you suppose it to be, so keep your mind quite easy. See and follow advice to "Jochim" above. You should not get low-spirited, for with the tonic above-named and cold sponging in the morning, you will get quite well. Write again if not cured.

Felix.—You suffer from a constitutional ailment, for which we should advise you to begin at once a course of cod-liver oil and syrup of iodide of iron. Have 3 drachms of the syrup of iodide of iron added to six ounces of cod-liver oil, and a little mucilage acaciæ—making up a six-ounce mixture in all, and take a tablespoonful of this thrice daily. Clothe warmly, avoid chills, and let your diet be generous.

Youthful Folly.—Take the tonic recommended to "Jochim" above; and if not cured, write again. Such a tonic will remedy the lowness of the system on which your affection depends.

Tom Pinch.—Don't feel alarmed. What you name, as often as not, is a sign of health. Take cold baths, or try cold sponging, each morning; let your food be non-stimulating; sleep on a hard mattress, and don't take fluids late at night. Write again if you don't improve.

Caroline Johnson.—You have probably strained some of the ligaments of the knee. We should advise you to have an elastic knee-cap fitted by a surgical-instrument maker, and to use hot and cold water douches to the knee alternately, twice or thrice a day.

A. S. T.—1. There is a person of the name you mention on the "Medical Register;" but we do not know whether the qualified man is the person named or his son. 2. We have not seen the "magnetic" appliances you name; but in our experience it is safer to assume that so-called "magnetic" appliances are shams, than to believe that they possess electrical properties. There are hundreds of shams for one genuine article of the kind. Read the articles on electrical appliances (by Mr. Carpenter), recently published in Health. 3. See advice to "Tom Pineh," in present number of Health.

S. W. P.—Such belts as we have seen of the kind you name are worthless in so far as electrical effects are concerned. Read Mr. Carpenter's recent articles in Health on "Electrical Appliances." Have nothing to do with any of these "belts." Pulvermacher's Belts are genuine electrical appliances, in that they can be proved to produce strong currents. The ordinary "belts," magnetic and otherwise, produce no current at all.

A. B. C.—1. You should not take tea or coffee with dinner. "Meat-teas" are decidedly injurious to digestion. Cocoa might be taken, but it is better to avoid taking either tea, coffee, or cocoa with the chief meal of the day. 2. There is no more common cause of so-called heart-troubles than indigestion. There is strong sympathy betwixt heart and stomach. See to your digestion. 3. See any physiology text-book for the reply to your third query, which is much too lengthy a matter for reply here. Dr. G. Wilson's "Healthy Dwellings," or Corfield's "Health," or any of the Health primers will suit you. We begin our "Food" articles very shortly.

Ivanhoe.—We are keeping the "bath" papers in mind; but space is limited, and we must give attention to many other details. As to the heat of smoking-room, the room should be even cooler than, say, a dining-room, on account of the smoke and tendency to impure air. Hang the thermometer about the middle of the wall. You want the average temperature—not that of the cool below, or the heated air above. 3. Depends very much on individual power, amount of work (physical and intellectual), health, &c. You must judge by results, and see that no symptoms of lassitude follow. If absent, the practice will be safe.

Investigator will please note that all queries are to be addressed to the Editor, and not to the Publishers of Health. "Bright's Disease" is a serious kidney disorder. Its causes are very varied—cold, intemperance, scarlet-fever, &c., and certain constitutional states.

Jack o' Lantern.—You suffer from acne. The "maggots" consist merely of matter which blocks up certain of the skin ducts. See advice given for this ailment to "Jochim," in present No. of Health.

Hope for the Best.—1. No wonder: celery and tea will not assimilate. Eat your celery after dinner, and don't take tea-dinners at all. 2. Try inhaling occasionally the steam arising from a pint of hot water, to which 10 drops of creosote or tincture of iodine have been added. This will cure the phlegm. Try the effect for a

week or so of the tonic recommended to "Jochim" in the present number of HEALTH. The hearing may possibly be bettered by a general toning of the system. See that your abstinence is not carried too far. We never recommend alcohol to be taken where it can be of no service; but a glass of good claret with dinner often saves much medicine-drinking, and, so used, *is* a medicine and dietetic.

C. F. J.—1. Wear a flannel bandage from the loins; see to the warmth of the feet; avoid dampness from perspiration, or any other cause, and see to the general health. 2. Describe the symptoms of the person who rejects the food. In such a case there is reason to suspect stomach-disorder of one kind or another.

H. ROSE.—Yes; if what you name occur too frequently they may affect the health. You do not say how frequently the ailment occurs. Try cold sponging each morning, sleeping on a hard mattress, and avoid taking fluids late at night. Don't be alarmed in the least, and let us know in a little if you have improved.

BELLA.—The acetic acid in our opinion would injure the hair. Read our papers on the "Hair," which you will find in the early monthly parts of HEALTH. Various recipes are there given for strengthening the hair.

GILBERT.—Avoid stimulants. See advice to "H. Rose" above. You suffer from no disease, so don't be alarmed, and avoid quacks above all.

A TAILOR.—Possibly your trade may affect your knee. We should advise you to try the effects of hot salt bathing to the leg, applied frequently at night, and avoidance of cold. When the pains are severe, rub the leg with hot oil. Clothe warmly and avoid chill. In your case you may derive good from a tablespoonful of cod-liver oil, taken after food thrice daily.

BETA.—In such a case, we should feel inclined to suggest your having a good surgical opinion. These cases often depend on some local condition which only a surgeon can, by personal examination, counteract. We should say, from your description, that the patient demands some constitutional treatment (*e.g.*, cod-liver oil and iron), and strict attention to the general health is absolutely necessary. Glad to advise further, if need be; but you should see a good surgeon.

TYPO.—Substitute for the iron, the tonic recommended to "Jochim" in present number of HEALTH. Take this for a week or so, and report again. Let your diet be light, but generous and nutritious. Avoid chills, especially after exercise.

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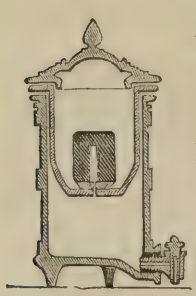

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, NOVEMBER* 23, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE Christmas Lectures on Popular Anatomy and Physiology, which are to be delivered in Princes' Hall, Piccadilly, London, W., at Christmas, by Dr. Andrew Wilson, Editor of HEALTH, have been finally arranged as follows:—Lecture first, on Thursday evening, Dec. 27, will deal with "The Bony Framework—the Skeleton." Lecture second, on Monday evening, Dec. 31, will deal with the subject "How we Move—Joints and Muscles." At the third lecture, on Wednesday night, Jan. 2, 1884, "The Heart and its Work in the Circulation of the Blood" will be duly treated; while the fourth lecture, on Saturday, Jan. 5, 1884, will be devoted to an exposition of "Nerves, Brain, and their Work." This programme, in respect of its varied nature, has been suggested as likely to prove interesting to the public. All the lectures will be illustrated by diagrams, &c., exhibited by aid of the lime-light, and a full and attractive method of illustration will thus be secured. The lectures will begin each evening at eight o'clock, and terminate about 9.20.

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DETAILED syllabuses of the lectures will be ready in a few days, and these syllabuses, together with tickets and every information regarding the lectures, can be had from Messrs. Chappell & Co., 50, New Bond-street, S.W., and 14, Poultry, E.C.; Austin's Ticket Office, 28, Piccadilly; and the usual Agents. All applications of a business nature are to be addressed to Mr. John Flack, 74, Great Queen-street, Lincoln's-Inn Fields, London, W.C.

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IT is intended that these lectures should form the nucleus of what may become an important movement in connection with the diffusion of popular scientific knowledge in the metropolis and elsewhere. In respect of the facts that the art of living well, and the practice of health-laws can be truly founded only on a knowledge of the normal structure and functions of the living frame, it is hoped that Dr. Wilson's lectures may thus aid in diffusing that information which forms the basis of health-science. The lectures, it may be added, will be adapted for both sexes, and for old and young alike, and will be delivered after the fashion of the "Combe Lectures on Physiology," which have attracted large audiences throughout Scotland.

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THE conference on "School Life in Relation to Health," which the "National Health Society" propose to hold, has been postponed from December until the spring. This change is rendered necessary by the fact that at the close of the year most persons who are interested in this question leave school and their ordinary labours for the holiday season. The delay in holding the conference is, therefore, a wise one, and should secure in the spring a large attendance of parents, guardians, and the teaching profession.

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SOME fifteen years ago or so, a certain Zouave, named "Jacob," created a stir in Paris by his assumed ability to work cures of marvellous kind. Amongst the poorer classes Jacob was accounted a marvellous person, and in respect of the fame which attached to his healing powers the Charlatan-Zouave appeared to be a close imitator of the famous Mesmer, who gave his name to the particular "ism" which still occasionally appears on the platforms of our entertainment-halls. Jacob has, however, like the proverbial coin, "turned up" again—this time in a new character. It seems that he practised bone-setting (in anything but a miraculous fashion) amongst his cures; and he was recently indicted in Paris on a charge of practising medicine and surgery without a licence, and of having, in the capacity of quack, broken a lady's arm. Jacob's defence was that the arm had "stiffened" (or, in surgical language, had become "anchylosed"), and that his treatment had been directed to breaking down the adhesions of the bones, and to thus freeing the arm from its deformity.

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LIKE most quacks, and especially like the "religious" quacks of our own day, Jacob is a firm believer in his supernatural endowments. He alleged in court that he did not know how he performed his cures, and that he was gifted with "a magnetic fluid," which enabled him to work wonders. He was sure, he added, that "God had endowed him with the faculty of curing diseases;" and, franker than many of the quack fraternity, disclaimed all knowledge of either medicine or surgery. But the case of Jacob presents us with another example of the extent of human credulity. The lady who indicted Jacob was stated to have formed one of eighty-five patients who stood in a row in his house. He merely "touched her shoulder" gently, remarked that her arm was broken, and that she should consult a doctor. The gentle manipulation of the arm is, however, alleged to have been a severe twist; and the Paris courts have now to decide upon the nature of Jacob's practices, and the question of his criminal or other responsibility in the matter.

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SANITARIANS are never weary of warning the public that milk, of all fluids, is singularly liable to absorb deleterious gases, &c., and to become a vehicle for the conveyance of disease into our homes and persons. In a recent number of the *Lancet* attention was directed to the dangers of milk-conveyance in towns. It was urged that the ordinary practice of selling milk, by its carriage from door to door by milk-women, is fraught with danger. The milk-carriers are not over cleanly, it was said, and the dipping of the hands into the milk in the act of ladling out the household supply was pointed out as a singularly obnoxious practice. The milk-cans also are often left exposed in the street, and the fluid thus becomes liable to contamination from various sources.

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SOME correspondence has been elicited by the following remarks:—The heavy burdens carried by milkwomen are decidedly injurious to their health; and there appears to be little or no supervision of the *employés* of the dairies of large towns in the matter of their cleanliness. In

some towns we have seen the milk drawn off from a barrel furnished with a tap, and conveyed in a neat cart. This is the only safe fashion of milk-conveyance; and one which, above all, renders the likelihood of adulteration small. When one reads of a milkwoman giving two dirty-looking tramps a drink of the beverage she was conveying on her rounds from the milk-can itself, it seems high time to protest against such laxity in the case of milk being possible. There is a growing need for the strict supervision of dairies as each recurring epidemic of typhoid fever shows, and it would be well if the supervision in question (when it is enforced) should be made to extend to the milk-carriers and their ways.

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THE recent cry of better houses for the working classes has attracted, in London especially, a large share of attention. For our own part, we are heartily glad to see and hear of interest being exhibited in the dwellings and mode of life of the poor. But we are tempted to express surprise that so much is being made of the condition of the slums in cities, as if, indeed, the squalor and horrors of the poor were things of new or recent discovery. If the public are only now beginning to waken up to the knowledge that human lives may be lived amongst conditions of the direst misery, "better late than never," must be the Sanitarians' remark. There is nothing at all new in the latest "revelations," which, however, are spoken of, by both press and public, as if they had discovered a *terra incognita* in modern life. We make bold to say there is not a medical student in dispensary practice, and not a city missionary of even a few months' experience, who could not have supplied the public with a multitude of details, regarding "how the poor live," quite as repulsive and as realistic as those which have formed the topic of recent remark. Enterprising journalists and artists may present something new to the public when they descend into the courts and alleys; but the condition of the poor is no new thing to doctors and missionaries, who have long stood aghast at the sight of evils all unknown to the world around. We shall wait with interest to see whether, after all the "cry," there is to be some tangible result in the shape of health-reform amongst the denizens of the slums.

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HEALTH-LECTURES, and all other forms of instruction, however popular they may be made, can never teach the abject poor lessons of sanitary reform. The conditions against which the reformer has to contend in the slums, are terribly strong and powerful in their resistance to improvement. Inherited poverty, disease, and crime tell with cumulative force in the production of ill-health and its attendant evils. Until there can be organised a "health mission," which, armed to the teeth against disease and ignorance, will descend into the alleys, prepared by a strong backing of wealth, to give better food, purer air, and healthier surroundings to the sweltering masses, we must simply be forced to content ourselves with bewailing and enduring what cannot be cured. The whole question is a national one, and will only be solved when it is made the subject of national interest and of Government supervision.

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AN interesting return has recently been made of the increase of insanity in France. In 1882, 13,434 persons were admitted to asylums, and of these 10,184 were new cases; the total number under treatment being 58,760; 27,000 of these being men, and the remainder women. The number of cases due to alcoholism is said to become larger each year. The average duration of treatment for men in France is 276 days; and for women, 295 days.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE SACREDNESS OF BURIAL.

By S. PHILLIPS DAY.

THE utterance from the Book of Genesis with reference to the origin and physical end of man has, for four thousand years, been interpreted to be a divine oracle enjoining the burial of the dead. "Holy men of old," observes the Bishop of Lincoln, "fell asleep in death, and were laid in the bosom of their mother earth." Indeed, as the same high authority avers, "Such was the anxious care of faithful men of old for the burial of the body, that not a single instance can be cited from the Old Testament, where any other mode of disposing of the body of a holy man after death is recorded, than that of burial." To be unburied is described in Holy Writ (1 Kings, xiv. 11), as one of the most ignominious punishments. It is somewhat singular that the first commercial transaction recorded in the Scriptures is the purchase of a burying-place. On this matter, an eminent writer remarks: "The minute and particular manner in which the circumstances are narrated is noteworthy, and those who hold that the Book of Genesis consists of various early inspired documents, collected by Moses, may suppose that this detailed account is a kind of legal record of the purchase, an opinion which the concluding passage, specifying the contents of the field, and twice stating the ownership of Abraham, seems to confirm."

On the testimony of Dr. Eadie, the ordinary mode of burial among the Jews was in this wise:—The body of a deceased person having been washed and laid out, was wrapped in folds of linen cloth, and the head bound with a napkin. It was then placed on a bier, and finally borne to the grave. Hence the restored earth-to-earth sepulture, introduced at Woking, owing to Mr. Seymour Haden's advocacy in the *Times*, is of very early origin, and no new-fangled system, as some uninformed persons may suppose. Professor Ewald, in his "Antiquities of Israel," states that although the individual in whose dwelling any one died found himself and his household rendered unclean, nevertheless that the undefinable shrinking from a corpse was not carried to such an extent in Israel as it was among other ancient and, in part, highly-civilised nations—(the Zarathustrians, for example)—where it was the custom either to expose the dead on high places to be consumed by vultures, or else to burn them, as was done at certain periods among the Greeks and Romans. The burial-places of the Jews were both public and private, and were usually selected in gardens outside of cities. The law decreed that whoever touched a human bone or a grave must submit to the onerous purification mentioned in Numbers xix., 16. This, no doubt, induced the Jews to have burial-places as far removed as possible from human habitations and from temples. Hence, high ground was preferred for mortuary purposes, although deep caverns were occasionally employed. In order to make the ground safe to tread upon, lime was brought into requisition. After the lapse of time sanitation appears to have been disregarded. Kings began to erect tombs for themselves within the Temple of Solomon—an act especially censured by the prophet Ezekial; while the magnificence and scrupulous purity of the tombs of the opulent was in striking contrast to the rude and squalid graves of the common people. "The valley of corpses" to the south of Jerusalem became a

scandal and a menace to the health of the citizens, equally as repugnant to the senses as are our own pestiferous London cemeteries. Notwithstanding this departure from ancient custom, still to be unburied, as I have already premised, was regarded as disgraceful by the Israelitish people. The wretched doom of Jezebel and the dolorous fate of one of the Hebrew Kings—"he shall be buried with the burial of an ass, and cast forth beyond the gates of Jerusalem"—pregnantly illustrate the veneration in which inhumation was held by the Jewish mind.

Caves in the sides of mountains were sometimes used for interment. Such was the sort of tomb that Shebna had prepared for his last resting-place. Kings and prophets were buried in their respective cities, occasionally even in their own houses. Rebekah's nurse, we read, "was buried beneath Beth-el, under an oak." In the "Talmud" we are informed that when Joseph died his body was embalmed, and subsequently laid in the ground near the banks of the Nile. In Egypt and Palestine the early practice of embalming the dead was followed by the Christian Church. It had originated in a belief which Christians considered quite in harmony with their own views, and the practice having been found in existence was not discarded. In primitive times, as Professor Ewald shows, treating of sanctity in Nature, the physical universe made the strongest impressions on men. To them Nature "was not merely a friendly being, but also, so far as their knowledge of her was little trustworthy, far more a hostile living being, dark and terrible, which they must take heed not to disturb and insult, and whose evil actions where hard to avert. The more direct, and therefore the more powerful, were these obscure impressions which man received from Nature, the more troubled became his dread of doing anything which seemed antagonistic to her, and the more diligent were his efforts to remove to a distance from himself any repulsive object which he might anywhere happen to meet with. However, the whole of Nature in all its infinite details could not be always making such impressions on man; when, therefore, he thought he had no need to fear, he soon acted with all the greater recklessness and cruelty, even towards the human body itself."

Reverence for the dead and the duties therefrom arising, formed an important part of Greek and Roman religion. The tragedy of the "Antigone" of Sophocles is one pregnant illustration of this fact. The classic poets exhibit a deep impression of the solemn duties due to the dead. Indeed, on the testimony of Prebendary Browne ("Hist. of Classic Literature"), it was this very feeling which probably induced Homer in his "Iliad," and Sophocles in his "Ajax," to prolong their respective poems beyond the limits otherwise naturally appropriate to the true catastrophe. Virgil (Æneis, book iv.) causes Queen Dido to utter as not the least formidable part of her curse on the Trojan chief, that her enemy should

> Fall, untimely, by some hostile hand,
> And lie unburied on the barren sand;

while, when the Sibyl attends Æneas to Hell, there are brought before his startled vision:—

> The boatman Charon; those, the buried host,
> He ferries over to the farther coast;
> Nor dares his transport vessel cross the waves
> With such whose bones are not composed in graves.

In Rome, land used for interment became, *ipso facto*, invested with a religious character, which extended not alone to the area of the cemetery or *quietorum*, but to the *hypogæa* or subterranean chambers connected therewith, perhaps also to the gardens, orchards, and other appurtenances belonging to it. Under the Roman law, the violation of a tomb was visited with the severest penalties. On the testimony of Paulus, those convicted of removing a body, or digging up the bones, were, if persons of the lowest rank, to suffer capital punishment; if of higher condition, to be banished to an island or condemned to the mines. And, singular to say, this privilege was not denied those who, as martyrs, had forfeited their lives to the law. There was nothing in the social or religious position of the first Christians in Rome and elsewhere to interfere with their liberty in the mode of disposing of their dead. No general edict was directed against a Christian cemetery (*cœmeterium*, or "sleeping-place"). Even in the year of our Lord 257, when the Emperor Valerian condemned religious meetings in the sacred precincts of the depositaries of the dead, he is absolutely silent as to any prohibition of burial. Hence, cemeteries became expressly recognised by the civil power. Pope Zephyrinus appointed Callistus as the overseer of the cemetery on the Appian Way which still bears his name, and who had received the ground from some distinguished citizen. The institution of cemeteries was deemed expedient by the Church, which inculcated the duty of the richer members providing for the reverent interment of the poor. It is stated that St. Ambrose sanctioned the sale of the sacred vessels by the Christian community rather than that the dead should want decent burial. The early Roman pontiffs were wont to keep "stations" in some of the cemeterial buildings, so that these cemeteries were regarded by Christians in the light of sanctuaries, wherein bishops would hold their synods, administer the sacraments, and preach the Gospel.

The practice of the Jews in not suffering the dead to repose nigh to their temples presents a striking contrast to that of Christians, who buried the departed in churches and in grounds adjoining. In the case of Levitical cities, the distance at which the dead should be kept apart from the living was 2,000 cubits. No body was suffered to be buried within the city walls, save in Jerusalem, where this privilege was reserved for the royal family of David and a few exalted personages. The public cemeteries for the accommodation of the inhabitants were situated without the capital, in addition to a special repository for strangers. The Emperor Theodosius forbade burial within a church or even within the limits of a town. When the Donatists first buried their martyrs in churches, the bodies were afterwards removed, such sepulture having been declared irregular and unlawful. The Civil Canon law was equally stringent. Although kings and other potentates had the privilege afforded them of burial in the churchyard, it was not until the commencement of the sixth century that the people seem to be admitted to the like honour. By the ecclesiastical laws of England no one can be buried within a church without the licence of the incumbent. Herodotus points out how Pisistrates purified Delos, by removing all the bodies which had been buried within sight of the Temple, such an act being enjoined by the Oracle. It would have been well had a similar sanitary spirit prevailed among ourselves in the past. It would at least have saved our churches and cities from pollution, and not have marred the sacredness of sepulture.

THE hair of a girl in an Eastern factory was caught in machinery, torn off her head, and scattered in bits. But she did not mind it at all, kept right on at her work, and simply remarked that "it only cost $1 anyhow." This is the advantage of art over nature.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

FIFTH PAPER.

The *causes* of this affection are manifold, and as it may be taken for granted that almost any well-developed person taking more nourishment than is necessary to maintain his or her body in a normal condition will most likely become fat, this occurrence would be an instance of acquired obesity. But certain individuals are, undoubtedly, naturally more prone to form fat than others, and the predisposing circumtances are, a family tendency, bodily and mental laziness, and a contented mind, acting on an hereditary disposition to fatness. The saying, "Laugh and grow fat," is well founded, for it is well known that anxiety and worry, if at all prolonged, are amongst the greatest enemies of a plump figure. A wrong impression is abroad as regards the mental capacities of fat folk, hence the offensive epithet, "Fat-head." I fear me that Shakespeare is a good deal to blame in this matter, for he says :—

> Fat paunches make lean pates, and dainty bits
> Make rich the ribs, but banker out the wits.

But it is better, I think all will agree, to be fairly plump and jolly than thin and miserable. Rabelais was clearly of this opinion :—

> Mieulx est de ris que de larmes escripes,
> Pour ce qui rire est le propre de l'homme.

Women of the better classes have no experience of what Darwin has justly called the "struggle for existence," so that taking life at ease and enjoying the good things of this world, they are very prone to put on too much fat, and frequently, if this fatty malady be not checked, graver results are apt to follow. Men of all ranks are in the habit of taking, in one shape or the other, more alcohol than is good for them, and were it not that their physical work and mental anxiety tend very much to check the formation and deposition of fat, a part of the alcohol taken in would be converted into it. So that the old writer had some reason when he said,—

> By drinking ale or Beere grosse humours grow,
> Strength is augmented, bloud and flesh also
> Encreaseth dayly . . . .

but to insure augmentation of flesh and blood, sound diet and regular exercise are necessary. As familiar instances of well-grown and physically strong men, brewer's draymen may be indicated; but they usually take too much beer to render them constitutionally strong.

Rest and confinement are important factors in the fattening process, as is well exemplified in the fattening of poultry and in producing the fatty livers of Strasbourg geese; and it has been repeatedly observed that, in confinement, prisoners have put on a good deal of fat. Want of exercise, fresh air, and sunlight also conduce to this state; and Dr. Chambers relates the case of a man who became fat while working in the cellars of a brewery, but got thin when he served upstairs in the shop. I would suggest that in the cellar he inhaled the brewing odour, as well as probably helped himself too freely when unobserved. Poorness of blood also tends to render its possessor prone to put on fat, as most medical men must be familiar with cases of severe loss of blood, or of people whose blood was in a poor condition after a bad illness, who have rapidly become stout; but in some of these cases I think there can be little doubt that more nourishment than necessary was taken. It should also be borne in mind that the convalescence in such cases would necessitate rest in bed, and thus lack of exercise is an additional factor in these cases.

A cold moist climate is said to predispose to this affection, but I am inclined to think that there are more fat people in hot climates, and if this be the fact, as I believe, I should attribute it to the small amount of exercise taken on account of the heat, and to the diet being more than is necessary for the mere bodily wants. Constitutional predisposition and a congenital condition or hereditary tendency are undoubted causes, and many cases are recorded in which the parents and grandparents were fat, and I have met with such instances. Chambers says that the affection is hereditary in 55 per cent. of the cases, but Bouchard found it in only 33 per cent. of the cases he records. Certain races of animals, especially pigs, and, to a large extent, horses also, have, through a process of selection, after having been fed and brought up in a particular way, shown a great aptitude to form fat, and have transmitted it to their offspring. The latter often rapidly put on fat in all parts of their bodies, so that even the muscles and glandular organs become infiltrated with it. Human infants have been born with this species of fatty infiltration; and occasionally the subcutaneous layer of fat is enormous in new-born children. I have recently had occasion to operate for club-foot on such a case coming from the north of Scotland; and several years ago I had a drawing taken of an enormous baby, five days old, whose subcutaneous fat was $3\frac{1}{2}$ inches in depth over the abdomen. The parents of this latter infant were big, but not fat people, and, being labourers, it may be that the tendency to the formation of fat was kept under by their hard work and low diet; the transmitted tendency expressed itself, however, in their baby. This and other well-known instances put beyond doubt the fact of the inheritance of this affection, and though the condition is rarely congenital, the tendency often becomes manifest at and after puberty. Certain families and races, especially the Kaffirs and South Sea Islanders, exhibit a great disposition to deposit fat, as do also the Zulus and some other African tribes.

The *age* at which obesity appears to be most common is, in my experience from 14 to 35, but many cases do not develop until middle age.

COTTAGE HOSPITALS.

THEIR CONSTRUCTION (*continued*).

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

THIRD PAPER.

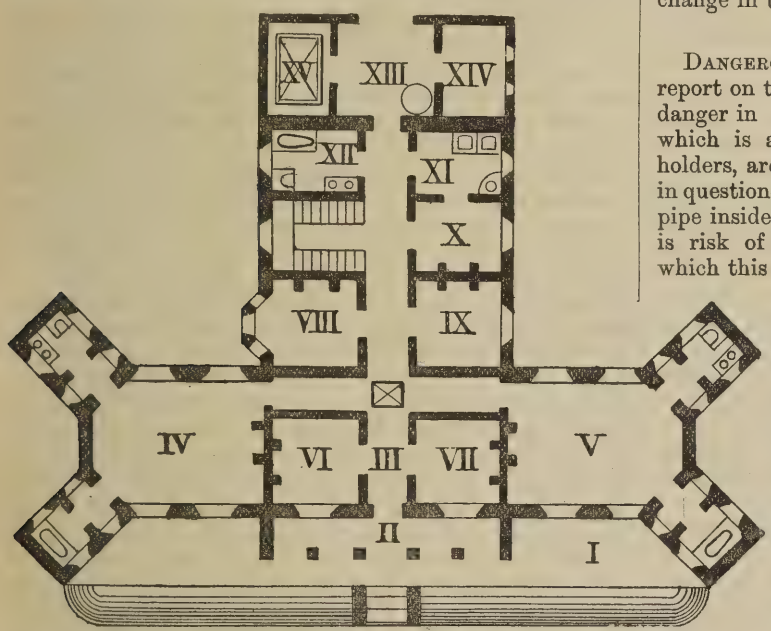
In our next paper, we shall touch upon the treatment of the walls inside the hospital when discussing the furnishing of it, and shall leave the question of cost to be taken up under the head of management. In the meantime, we shall suggest an ideal or typical cottage hospital, the plan of which is, in great part, based on one of those recommended by Dr. Swete. In doing this, we do not take it upon ourselves to suggest any architectural design for the elevation, but simply give a ground-plan, leaving the style to be chosen with deference to the prevailing form of buildings in the district.

As already said, we are strongly in favour of the pavilion system even in the erection of cottage hospitals, and the plan, therefore, is drawn with a central block, from which spring two lateral wings. The whole hospital is raised above the level of the ground to give an open ventilated space underneath the flooring, and this allows of the for-

mation of a terrace, I, in front of the hospital, with a short flight of steps down to the garden. From the terrace the building is entered through a little verandah, II, which leads into a passage running to the back of the hospital, where it opens into a small court. This passage, III, is lighted by means of a skylight at the point where it is joined by the two side passages which give access to the large wards.

The two pavilion wards, IV and V, the former of which is intended for men, and the latter for women and children, are of similar size, 15 ft. by 20 ft., and have each three beds. They have open roofs of varnished timber, which considerably increases the cubic space. Each has an open fireplace and four windows, two in each of the longer sides, and also a Tobin's and a Tait's ventilator. At its fire end each ward has a bath-room in one corner and a watercloset in the other; both of these being in offshoots from the ward, and carefully shut off from it by means of a passage provided with two opposite windows to give perfect cross-ventilation.

In the main block between these two wards, are two rooms of equal dimensions, 10 ft. by 10 ft., VI being a day room for patients, and VII the nurse's room. Behind the cross passages we have an operation room, VIII, 10 ft. square, but larger on account of a bay window. This room may be used also as the surgery. Beside it is a private ward, IX, also 10 ft. square, for cases of accident, operation, or other special character. Beyond it is the kitchen, X, which is 10 ft. by 8 ft., and has a door



leading into the laundry, XI. This in size is 10 ft. by 7½ ft., and fitted up with a copper and large fixed tubs. Opposite the laundry, and of equal size, is a bath-room, XII, with lavatory and water-closet. Outside of the main wall of the hospital is a court XIII, with gateway large enough to admit vehicles, and in this should stand a large waterbutt to collect and store rain-water. Placed as it is in the plan, it may have a pipe into the laundry to supply the washing-tubs. On one side of the court is a store-room, XIV, and on the other side the mortuary, XV, which is lighted by a skylight. These are both of the same dimensions, 10 ft. by 7½ ft.

If necessary, the central block may have a second storey. The intention of our plan is to have apartments above the operation-room, special ward and kitchen lighted by dormer windows, without any upward extension of the walls. If more accommodation is required, additional rooms may be provided by similar treatment of the roof-space above the front rooms, VI, and VII, ; but we are of opinion that the three apartments which we have already indicated are amply sufficient to give bed-rooms for servants and presses for linen enough for a hospital of six or seven beds.

Before closing this brief sketch of the construction of a Cottage Hospital, it may be well to touch upon the changes required when a cottage already in existence is to be converted into an hospital. These will vary with the state of the building. It is possible that the only closet on the premises may be a cess-pit in the garden, and that there may be the further adornment of an ash-heap or dung-hill. All such must be removed. In their stead proper and sanitary appliances, such as we have mentioned above, must be fitted up. The water supply and ventilation must be put on a good footing. The flooring of the ground-floor should be taken up, and sufficient soil removed to leave an open space beneath the flooring when replaced, and this space should be ventilated. The walls may be in a good condition, but if the plaster is filthy, it will be well to chip it all away; apply quick-lime freely to the chipped surfaces, and afterwards re-plaster the walls.

Many cottages notoriously unhealthy have been transformed by such efficient measures as are dimly foreshadowed in the preceding paragraph into most healthy Cottage Hospitals. Many more may undergo the same change in the future.

Dangerous Soil-pipes. — Mr. Turner, in his annual report on the Hertford rural sanitary district, points out a danger in connection with the soil-pipes of water-closets which is as yet but little appreciated by either house-holders, architects, or builders. The custom in the district in question—as, indeed, almost everywhere—is to fix the soil-pipe inside instead of outside the building, and the result is risk of injury to health. One of the methods under which this may arise is indicated in the report. Such pipes are almost invariably constructed of lead, and the moisture condensing on the inside of the pipes, in contact with the metallic impurities contained in the lead, sets up galvanic action, which results in the destruction of the lead. Perforation of such a pipe has taken place within a twelve-month, and many pipes have come to be so worm-eaten and destroyed as to admit large quantities of foul air into houses. Even where a through current of air is ensured, soil-pipes must necessarily be foul; and if it be an objection to their being placed outside a house, that they look unsightly, it is easy enough to let them into a chase, or otherwise to hide them. Inside houses they have often led to such diseases as enteric fever and diphtheria; outside they are harmless.

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

ON BRITISH MALE COSTUME IN THE NINETEENTH CENTURY.

By Edward Houghton, B.A., M.D., &c.

(IN TWO PARTS—PART SECOND.)

Possibly this essay may be in some measure traceable to personal considerations. This is sure to be said of any reformer, and it may be as well "to take the wind out of the sails" of malice by at once admitting the crime. I have been often tried by certain difficulties in connection with that marvel of malignant ingenuity, the modern shirt. Every male person, not of tender years, must have experienced his helpless condition when, after putting on a cold shirt, and breaking his studs and finger-nails in closing the front part (duly stiffened with starch and borax), and having put on several other cold garments over that, he discovers, to his horror, that there is no button to the neck-band of the shirt to which to attach that instrument of torture, "a British collar," to whose yoke he has been accustomed to bow his neck.

I may be permitted to ask, "What is the unfortunate wight to do, on a cold January evening, when not even a pin is within reach, and he is duly expected to present himself at some hospitable neighbour's house in the only guise permitted at an evening party? Few men are so forlorn as to be altogether bereft of female help on such occasions, but otherwise there is nothing for it but to further chill the body by entirely undressing and running the risk of bronchitis or inflammation of the lungs.

We are all familiar with the picture of the Irish labourer who has a certain garment on his knees, and who, in his vain endeavours to thread a needle, is made by the clever artist to illustrate the "onconvaynience" of single life. It is said that women refuse on principle to sympathise with unlucky bachelors under these trying circumstances, alleging that "if they are not married, they ought to be so; and have no one to blame but themselves." But this is a very heartless way of disposing of the matter. If a man cannot get the woman he loves, is his single condition to be treated as a crime? or why should any man be compelled to marry if he has fears as to the result of entering into that state?

But, it may be said, can we not get further at present than a mere perception of the sins and shortcomings of British costume in the nineteenth century? Are there no general principles to be had in view, which may guide us in future attempts at reform; so as to prevent our losing heart at the apparent impossibility of the task which lies before us? Here we are on safe ground. Here no idiot can jeer at us in advance, and presume to "answer a matter before he heareth it," which, as Solomon says, would be "folly and shame unto him." It is not so very difficult to lay down general principles which ought to prevail in respect of national costume; nor, on the other hand, need any inventor be chagrined if his ideas, however excellent, are not immediately taken up, simply because the element of nationality will assert itself. But I am a man before I am a Briton; and my bodily frame, as that of a human being, deserves consideration even more than does the good opinion of my unduly conservative fellow countrymen.

If the French peasant is able to afford a costume well adapted for labour, and yet capable of being washed as often as necessary, why may not an English workman (whose average income is much greater) do the same? The mountains which are sure to be made out of molehills when reform is spoken of, may be made to remove by those whose faith is sufficient, and to plant themselves for ever in the depths of the sea. After all, if the worst comes to the worst, the blouse or the Garibaldi jacket are far from unbecoming garments for a man, especially if confined at the waist by a neat belt; and they do not need elaborate measurements or fitting; and can, consequently, be bought ready-made. This is no small matter with busy men. Why must a garment for a gentleman require as much measuring as a lady's dress, unless the wearer is prepared to appear as a regular "Guy"? It ought to be possible to go into a shop, and buy a costume of any colour for a score or two of shillings, which would fit any man, with the help of a little domestic trimming and fixing-up. The result would be that men would look just as well, and feel much more comfortable in their clothes than at present, while the time and money wasted on elaborate tailoring would be absolutely saved. Not that I have anything to say against tailors, who are a highly respectable body of men; but their number must be greatly diminished by any real reform; whilst ready-made clothing would be the rule, instead of being the exception, as it is at present. It is upon the underclothing that we must depend for real protection against draughts, &c.

Women do not suffer one half as much from colds caught in railway carriages and other exposed places as men do, although they almost invariably plant themselves opposite open windows in travelling when they have a chance; whilst the male occupants view their love of draughts with ill-concealed uneasiness. This I have observed hundreds of times in travelling; and I have no doubt that they are really better protected from chills by the underclothing which they wear, than men are by their heavy clothes, which lie open in every direction to the treacherous blast. I know a hydropathic establishment, situated in a bleak neighbourhood, where the patients used all to be recommended to get short sleeves made to their waistcoats, and I am bound to say that the general testimony was to the effect that even 4 or 5 in. of sleeve made a difference of actual warmth equal to an overcoat worn all the day. Reasoning from analogy, I should say that the fastening of full knickerbockers at the knee, *à la* Rubens, would have a similar effect. The object of this essay being merely to get rid of the systematic obstruction to reform which now exists, I have not, at present, any cut-and-dry scheme of costume to bring forward (being convinced that a really useful reform must not be too obtrusive in its character); and I now leave the matter in the hands of others, hoping that they will continue to "keep the ball rolling" until some genuine reform is effected.

Oysters in America.—The consumption of oysters in New York is estimated to cost 5,000,000 dols. annually. At Boston the annual expenditure under this item is set down at 1,700,000 dols.; and at Philadelphia at 1,500,000 dols.

"Have you given electricity a trial for your complaint, madam?" asked the minister as he took tea with the old lady. "Electricity?" said she. "Well, yes, I recon I has. I was struck by lightning last summer and hove out of the window, but it diddent seem to do me no sort of good."

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

SHORT-SIGHTEDNESS: ITS CAUSES AND PREVENTION.

By Henry Power, M.B. Lond., F.R.C.S. Eng.

(From the *Lancet.*)

I may just mention the arrangements which the last and one of the best informed writers on this subject regards as most serviceable for school work (Reuss). In the first place the distance between the edge of the desk and the front edge of his seat must be 0, or they must even somewhat overlap each other; secondly, the difference in height between the bench and the desk must be as great as the distance of the elbow from the bench when the arm is hanging freely down: = 5-7 centimètres;* thirdly, every school bench must have a proper back, which must not be the back of the desk behind. There is much difference of opinion amongst high authorities as to the best form of back, some preferring a high back, others a T-back of moderate height, and others again a low back. The high back supports the lower part of the dorsal region of the spine, and thus relieves the lumbar (or loins) region of part of the superincumbent weight. The moderately high T-back supports the sacrum or the lower lumbar vertebræ, fixes the pelvis, and renders the sitting position one of rest. The low back fits into the curvature of the loins, and fulfils the purposes of both the other forms partially. It is the form which is generally regarded as being the best. It is on the whole best that each seat should have its own back, since with continuous backs, overcrowding, which should be religiously avoided, may occur. The back should be curved to suit the form of the body, and be firmly and solidly constructed.

The bench on which the scholar sits should be hollowed out continuously with the back, and be either flat or a little raised in front. Its breadth should be, in accordance with the size of the boy, from 23 to 34 centimètres. The height of the bench should be such that the knee is bent at right angles to the well-supported and resting thigh, and that the soles of the feet may be planted flat on the ground or on a foot-board. The table-top must be broad enough to support books and papers, and to allow them to be pushed forward so far that they do not interfere with writing. Thirty-two to forty centimètres are the right dimensions. The desk-top must, moreover, form an inclined plane; nothing conduces so much to stooping as a flat desk. The limit is that the ink should not flow back in the pen, but this is much too great, since books and papers would slide off unless prevented by a raised edge at the bottom of the desk, and such edges are objectionable, since they hurt the arm in writing. An inclination of 2° in 12′ is about right. For reading, the desk inclination may be as steep as possible, but this is not easy to manage in school desks. The height of the desk is from a medical point of view secondarily determined as soon as the height of the bench and the difference between the bench and the desk is determined. If the feet are to rest on the ground, the height of the desk will have to be different, according to the size of the boy, which may be inconvenient to the teacher. The difficulty may be overcome by having a movable latticework for the feet to rest on. The desk lastly should be sufficiently broad, 50 to 60 centimètres, for each boy. Arrangements require to be made to allow of standing as well as sitting.

An immense amount of attention has lately been directed to various points in printing which have been shown to exert an influence on the vision. First, in regard to the letters themselves. No one can compare the Gothic with the modern Roman letters without being struck with the superior legibility of the Roman type. The flourishes of some of the letters, the close similarity to one another of others, as of the "h" and "k," the "f" and "s," the "u" and the "n," all render a closer examination of the print requisite in the one case than in the other. Javal, to whom we are indebted for much interesting observation on this subject, says that the increased number of myopes (or short-sighted persons) that has, he declares, been noticed in Elsäss since the annexation consequent on the war of 1870 is due to the introduction of German type and writing into that province. Weber considers that the absence of fine upstrokes in the Roman form of type is a distinct advantage, and, further, that the arched, instead of the pointed, shape of the letters in the Roman type renders them more easy to read, and therefore require less earnest fixation. Weber maintains that a child of eight years of age who has read and worked with Latin or Roman type for three months is in advance of a child who has read the Gothic type for two years. The size of the short letters, such as "m" or "n," should not be less than 1·5mm. and the interspaces between two words should be somewhat greater, 2mm. or 2·5mm. It is considered that letters smaller than this are injurious. The leader of the *Times* has a height of short letters of this size, and that is a very legible print to the ordinary eye at a distance of from twelve to fifteen inches. A much smaller type can be seen. Weber found that print, the small letters of which were only 0·7 mm. high, could be seen at 35 cm., at which distance the angle of convergence is very small, not exceeding 11° 21′, but that it could only be read with difficulty. With good print, and under favourable conditions, Weber found that 1,464 letters could be read in a minute with a loud voice, and in a low voice 1,900 in the same space of time. Hence, in one second 24 with a loud and 31 in a low voice. The perception of a letter requires 0·0316″, and its expression 0·0409″. Many journals have type the short letters of which have a height of 1 mm. or less. The thickness of the letters is about 1-4th mm., or 1-100th of an inch as a rule, and certainly not be less than this in school books. The little tranverse line at the top and bottom of many letters is of importance in obviating the effects of irradiation. The form of the letters has been particularly studied by Javal. The length of the lines is not without its effect. A very short line involves waste of power in the movements of the eye, and it is to be re-

* A centimètre is ·39 of an English inch.

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet.* — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

gretted that we do not read the lines alternately backwards and forwards. On the other hand, a long line like the quartos and folios of old times not only fatigues the eye, but renders it easy to mistake the next line in the return movement. The length of line of the *Times'* leader is 2·75 mm. I take Justin McCarthy's "History of Our Own Times" as a good specimen of modern type and printing, and with it the School Primer and the Fifth and Chambers's Reader may be compared. In the Virgil of Pickering's diamond edition there are thirty-two letters to the inch. In the Walton's Lives about thirty. In the Iliad twenty-eight Greek letters. In Wordsworth's poems, Kent's small edition, there are about twenty letters to the inch.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HEALTH HELPS FOR THE PEOPLE.

The following are the draft suggestions for the formation of sanitary aid branches under the auspices of the National Health Society of London. The scheme may be commended to the notice of every town and city :—

"The object of forming sanitary aid branches of the National Health Society is to prevent the spread of the various infectious diseases, especially small-pox, scarlet fever (or scarlatina), diphtheria, measles, and typhoid fever. The work lies chiefly among the poorer classes; the occurrence of cases of infectious diseases must be ascertained, and, when found, assistance must be rendered by advice, and by material aid. A sanitary aid branch should also endeavour by every means to diffuse a knowledge of the laws of health, and of the proper methods of preventing the spread of infectious diseases.

"The medical officer of health for the district is the officer, legally required and qualified, to inquire into the causes and circumstances of an outbreak of infectious disease, and is empowered to do all that may be possible to prevent the spread of the disease. He is assisted in this duty by sanitary inspectors, who act under his directions. When a proposal to establish a sanitary aid branch is under consideration, an endeavour ought first to be made to enlist the co-operation and support of the medical officer of health of the district, and the first duty of a branch is, by teaching and by help, to persuade the parents or relatives of the sick to fulfil the orders and desires of the officer. The approval and help of the medical practitioners practising in the district ought to be sought, as well as the general co-operation of the dispensary, infirmary, or hospital of the neighbourhood, should there be one in existence; the house surgeon or resident medical officers of such institutions generally become aware of cases of illness at an early date, and they and the branch may be mutually helpful.

"The branch ought, as far as possible, to act in co-operation with, and obtain the assistance of, any organisations already in existence in the neighbourhood for aiding the sick; indeed, where there is a local institution for nursing the sick poor, the work of a sanitary aid branch may, to a large extent, profitably be carried out through or by it, or at least in intimate co-operation with it. An endeavour ought to be made to obtain the co-operation of the authorities of the schools, and to induce them to supply weekly returns of all absentees, stating whether the cause of the absence is known. In districts where there are factories, the co-operation of the owners and managers ought to be obtained. The support of the clergy of the district, of all denominations, ought to be enlisted; "district visitors" may be made valuable auxiliaries, especially for obtaining information.

"It is desirable to provide a lady manager, or other responsible head, practically acquainted with the work, and accessible at all times.

"One or more sanitary visitors must be provided. A sanitary visitor must be a woman, able to teach the best methods of using disinfectants for clothes, bedding, and rooms, able to advise on the nursing of the sick, and ready to co-operate with the medical attendant and the sanitary officers. A house must be provided as a residence for the sanitary visitors, and an office for the lady manager.

"The desirability of providing in this house, or in some other house (1) rooms for the reception of families during the time that their own habitation is being disinfected (about two days); (2) a room or rooms for lodging adult working members of the family—especially young girls in domestic employment—who would lose their work if compelled to live in an infected house; and (3) a room or rooms for convalescents; must be determined by the circumstances of the district and of the branch. No one of these classes of rooms is necessary to the success of the branch, but it is very much safer and better to have, at least, 1. When it has been ascertained that children have been absent from school, some fit person, either one of the sanitary visitors, or a lady interested in the undertaking, ought to visit the family and report to the branch whether fever be present or no.

"The poorer classes being apt to desire to conceal the occurrence of infectious disease in their families, owing to a fear that the general knowledge of such occurrence may interfere with employment, or may entail expense and inconvenience in carrying out the directions of the sanitary inspectors, it will be the object of a sanitary aid branch to encourage the early declaration to it of infectious disease, by the offer of assistance during the illness. Wherever possible, the best course is to have the sick person removed to a fever hospital. If this is done, the branch should superintend, through its sanitary visitor, the thorough disinfection of the room, bedding, and clothes of the patient, as well as the clothes of the persons who have nursed the patient, and will supply the disinfectants. The cost of the disinfection may be defrayed in whole, or in part, by the branch, or the help of the sanitary inspectors may probably be obtained in such a case, without causing any loss or inconvenience to the patient's family. In some districts medical officers of health may be able to supply disinfectants free of cost to the branch.

"Where the patient cannot be removed, the branch should superintend the nursing of the patient, and direct precautions against the spread of the disease. This object may best be carried out by keeping the patient and attendant in a separate room, by providing lodgings for the adult working members of the family elsewhere, by obtaining the necessary disinfectants, and by affording such additional aid in the way of assisting in domestic duties, or supplying to the patient suitable food, as may appear proper in the circumstances of each individual case; such aid to be given only where the rules laid down by the branch are faithfully carried out. After a proper period—seven or eight weeks in the case of scarlet fever—the branch should undertake the disinfection of rooms, bedding, clothing, &c.

"The cost of working a sanitary aid branch would probably amount to about £250 or £300 per annum; but this must depend greatly on the rent of the necessary premises (see above), and on the size of the district."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecturer on Anatomy in the Edinburgh Medical School.*)

IV.—FOOTBALL (*concluded*).

Of the two games, the Rugby form requires more strength in shoulders and arms, as well as in legs and back, while the Association requires more speed and activity, and greater neatness in managing the ball with the feet. The latter game has become extremely popular among the working-classes of Scotland and the North of England, and has spread with surprising rapidity within the last ten or twelve years. It is, perhaps, better suited to these players, since they do not so much require exercise of their upper limbs as of their lower ones, and since the rules, being comparatively simple, are more quickly picked up by lads who generally only begin to play after they have grown up. If, as is said, the accidents are less in the Association game, this is another reason for those taking to it, to whom a short time off work is a serious inroad into the means of livelihood. It is certainly a matter for congratulation that any game should have been found which would have attracted working lads to healthy open-air exercise on Saturday afternoons, and which would have drawn out their friends in such numbers to watch them, as the Association game has done.

In many of the English public schools this form of football has always existed, and still holds its place, so that Association clubs in England are largely fed by the old boys after leaving their school; but in Scotland the Rugby or Rugby Union game is mostly played at the schools, so that the chief football clubs in the upper classes follow in the same line.

As an exercise, the Rugby seems the better, since it develops the upper part of the body as well as the lower, and, as a moral training, it seems also preferable, in offering more scope for manly forbearance and good temper in its hearty rough-and-tumble struggles.

The game might be improved, however, in a way calculated to lessen the risks of strain and crush, without taking away the good features, by lessening the tight scrimmages as much as possible, and by encouraging a greater amount of "dribbling." One way to do this would be to allow running with the ball only from a "free catch" (*i.e.*, direct from the opponent's foot, before the ball has touched the ground), or on the first or second bound. The "forwards," too, should be enjoined not to avail themselves of even these privileges on all occasions, but to aim rather at concerted rushes in loose-scrimmage order; a plan of attack which is more effective than individual runs, even with good "chucking," while it is much more interesting to spectators. The objections to the tight scrimmages are that a very great deal of exertion is required with very little result; that any player getting on the ground might be seriously twisted or bruised by the wedged mass of his opponents surging over him, and that it forms a meaningless and uninteresting spectacle to lookers on.

It will, of course, be taken for granted that in either form of the game there should be no intentional injury to any player of the other side. If opportunities of maliciously hurting or disabling an opponent are to be taken advantage of, they certainly will be found in football. Let us trust, however, that no unnecessary obstacles to the game will be raised in this manner, and that one of the noblest of manly exercises will not be sullied by any such conduct.

As to which form of the game is the more dangerous it is really difficult to decide. A certain proportion of accidents do happen with either, though fortunately these are not generally serious. After some careful inquiry, it appears, as might have been expected, that accidents are much less numerous in schools than among the clubs of lads and young men who have grown up. But even these might be lessened if none played but those who were in fairly good condition, if light scrimmages in the Rugby game were lessened, and if all unnecessary violence were uniformly deprecated.

Now that the population of large towns is so quickly increasing, it becomes every day more important that the authorities should provide healthy recreation-grounds for the summer and winter sports of their younger inhabitants. These grounds have only to be thrown open, to ensure a free use of them on spare afternoons, with much benefit to the players and advantage to their friends, who will thus be attracted to the open air from less healthful resorts and less desirable pursuits.

We have dwelt thus somewhat longer on football because it is one of the most universally-played winter games, and because there really was material for discussion. In some particulars, and with suitable modifications, much that has been said might apply to hockey and la crosse, which are also winter games, but less extensively played.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

Workmen's Homes in London and Paris.—In an article in the *Times* on "The Dwellings of Parisian Workmen," in which the condition of the *ouvrier* in Paris is contrasted with that of the artisan in London, it is pointed out that though the population of Paris is not so large nor so rapidly increasing as that of London; nevertheless the two millions of Paris are crowded into a narrower space than that occupied by any similar number of Londoners. In the matter of parks and gardens, the Londoner is much better off than the Parisian. If the Parisian wants to stretch himself on the grass, he must go four or five miles from the heart of the city. Additional open space and a better class of dwellings will soon be provided for the poor in London, by broad avenues to be cut through slums, and by the building of tall houses on sites at present covered with low buildings. But in Paris every acre on which tall houses can be built has already been utilised.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

Moreover, the London workman can live outside London, and come in daily by train. In Paris, the *octroi* is the great bar to extramural residence. Nearly every article of food entering Paris has to pay duty, so that people who pass the *octroi* with parcels have to exhibit their contents; and under such circumstances, trains full of workmen carrying their baskets of tools and dinners could not pass rapidly to their destinations as they do in London. There is, again, no inducement in cheapness of rent to live outside the city. The article shows, moreover, that of the children born to the working-classes in Paris, more than fifty per cent. die in the baby-farmers' hands before they reach their second year. It is also shown how the progressive extinction of home-life among the Parisian workmen has had the most demoralising results.—*British Medical Journal.*

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Dr. Pettenkoffer on Cholera.—Finally, every one can do much for himself and his family when an outbreak does take place. To be the victim of an attack of cholera it does not suffice that the cholera infection should be prepared, and that there should be the required tropical and seasonal tendency, but there must also be the individual susceptibility. In one house there may be twenty or more persons exposed to the same infecting influence, but, as a rule, only one or two will take cholera. Experience has shown that the greatest influence is exercised by age, robustness, food, bodily and mental strain, clothing, cleanliness, &c. I cannot go further into individual dispositions at present, and must refer to a pamphlet on the subject which I published some ten years ago—"What we may do against the Cholera." One most important point is to avoid everything that tends to produce looseness of the bowels, the causes of which may vary with the individual. Nothing is so effectual in checking a cholera epidemic as careful attention to the state of the bowels, and medical assistance should be obtained as soon as the slightest premonitory diarrhœa shows itself. It is a great mistake to say that medical assistance is useless, and that because 50 per cent. of the cases on an average die, it is immaterial what we do. This is only true for cases which take on immediately the extreme algid form, in which case little can be done; but against the beginnings of the disease, against diarrhœa and cholerine, medical treatment is not powerless, but, on the contrary, most promising. Medical treatment of premonitory diarrhœa is one of the most important prophylactic measures against the development of the severe and dangerous form of the disease. Our sanitary authority will doubtless provide for quick medical relief, for the most careful watch over the supplies of food, and for everything which previous experience has shown to be important and useful. We may also hope that the enlightenment of the people of Munich will lead them to support loyally the efforts of the authorities to meet successfully any invasion of the disease, which, however, we trust may still be far distant from us.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A HOME SURGERY.

Putnam's "Handy Book" Series. Till the Doctor Comes, and How to Help Him. By George H. Hope, M.D. (New York: S. Putnam's Sons.)

Ambulance lectures and instruction in the art of rendering simple or first aid to the injured, are now thoroughly established as social institutions of high importance. The good work of the St. John's Ambulance Association in this country is being imitated in many quarters, and with satisfactory results. We have over and over again expressed the opinion that no public servant—policeman, railway guard, &c.—should be allowed to take duty without first undergoing instruction in ambulance. Only recently a case came under our notice—one of many—in which, had efficient aid been instantly rendered by the police in a case of drowning, the sufferer might probably have been restored. Hundreds of cases occur every year in which fatal results follow accidents, simply because no one knows "what to do" until the doctor can be summoned. Half-drowned persons are allowed to lapse into death, wounds are unstaunched, people allowed to choke, poisons to remain without antidotes—and all because the public are not trained—or rather will not trouble to educate themselves—in the simple elements of "saving knowledge." There is no reason why such knowledge should not be taught in our schools as supplementary to physiological instruction. No regrets can call back the life that has been lost; but our sorrow becomes trebled when the thought is pressed home that, with a little knowledge of ambulance work, we might have rendered timely aid to the suffering patient.

Dr. Hope is an English physician, and his work has been revised and adapted for American readers by a New York physician. This book is eminently sound in all its teaching, and deals with every topic likely to demand the attention of the public. The following quotation is eminently of practical nature:—

Bleeding from a Wound in an Arm or Leg, if severe, must be stopped by pressure. Make a pad of rag a good thickness, place this on the part, and bind a handkerchief or anything of that sort tightly round the limb. If that be not sufficient, slacken it a little, push a strong stick or a large fork under it, and twist it round; by this means you can get any amount of pressure. If the wound be in the wrist or arm, let it be held up over the head, or if in the leg let the person lie down, and support the foot on a chair. If you be by yourself in the fields, and get a severe cut with a scythe, or in any sudden emergency, such as a railway accident, use the remedy which has saved many a life on the field of battle,—take a handful of dry earth, put this on to the wound, and grasp it tightly, till you can have some assistance.

One of the most difficult situations in which to manage a wound is about the wrist or thick part of the thumb, particularly if it be deep. If this accident should occur when near a surgeon, let him attend to it directly, but if not, lose no time in dressing it yourself. Two people are required to do this properly. If you turn your hand with the palm upwards, and lay your finger on the wrist a little to the outer side, in a line with the thumb, you will feel the pulse beating; now let one person stand alongside the patient (not opposite to him) take hold of his arm with both hands, place one of his thumbs on this spot, but a little higher up the arm than the cut, and the other on the little finger side, and press firmly. While one is by this plan arresting the bleeding, let the other bring the edges of the wound together, place over it a thick layer of whiting or pipe-clay, or a large table-spoonful of flour, or if away from home common clay, then a pad of lint or rag of any description, and secure this in its place with a bandage or handkerchief, so put on as to press firmly on the spot. The thumbs may now be removed, but the hand must not be allowed to hang down. If the blood should continue to force its way through, you must, in addition to these dressings, lay a small pad on the artery where you felt the pulse, and keep it in its place with a bandage, or, what is very much better, a strong elastic band. If these means are not sufficient, you must obtain the assistance of a surgeon at once.

It is very desirable that every one, even young people, should understand that in all cases of severe bleeding, be the wound ever so small, the only thing which can be safely depended upon is *pressure*. Three youths lately were walking through some fields, when one of them, who had an open knife in his hand, fell, and the blade was forced into his thigh. His companions, terrified at the sight of the blood, ran off to procure assistance, while the unfortunate sufferer did his best by holding his pocket-handkerchief to the wound. Long before they could return his chance of life was gone. Here was a fine healthy young man cut off suddenly, who might

have been saved by the most simple contrivance. Even situated as they were in the open fields, a cork, a stone, a potatoe cut in half, a handful of earth, a bit of rag, or a bunch of grass rolled up into a ball, and put into a handkerchief or necktie, or a stocking, and tied very tightly round the limb so as to press upon the wound, would have arrested the bleeding, or at any rate have lessened it, till it could have been properly secured.

This, then, is a good rule, and may serve as a general one. In case of severe bleeding, press your finger on or into the bleeding place and keep it there till you can have assistance.

The description of the treatment of the apparently drowned is also clearly given:—

Send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient instantly, securing as much fresh air as possible.

The points to be aimed at are—first, and immediately the restoration of breathing; and secondly, after breathing is restored, the promotion of warmth and circulation. The efforts to restore life must be persevered in until the arrival of medical assistance, or until the pulse and breathing have ceased for at least an hour.

Treatment to Restore Natural Breathing.

To Maintain a Free Entrance of Air into the Windpipe.—Cleanse the mouth and nostrils. This is best done by placing the patient gently face downward for a moment with one of his wrists under his forehead. This allows any fluids to escape from the mouth and throat and the tongue to fall forward; draw forth the patient's tongue, and keep it forward; an elastic band over the tongue and under the chin will answer this purpose. Remove all tight clothing from about the neck and chest.

To Adjust the Patient's Position.—Place the patient on his back, with the head and shoulders raised, and supported on a small, firm cushion, such as a folded coat.

To Imitate the Movements of Breathing.—Grasp the patient's arms just above the elbows, and draw the arms gently and steadily upwards, until they meet above the head (this is for the purpose of drawing air into the lungs); and keep the arms in that position for two seconds. Then turn down the patient's arms, and press them gently and firmly for two seconds against the sides of the chest (this is with the object of pressing air out of the lungs; pressure on the breast-bone will aid this).

Repeat these measures alternately, deliberately, and perseveringly, fifteen times in a minute, until a spontaneous effort to breathe is perceived, immediately upon which cease to imitate the movements of breathing, and proceed to induce circulation and warmth.

Should a warm bath be procurable, the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and pass ammonia under the nose. The patient should not be kept in the warm bath longer than five or six minutes.

To Excite Inspiration.—During the employment of the above method excite the nostrils with snuff or smelling-salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

Treatment after Natural Breathing has been Restored.

To Induce Circulation and Warmth.—Wrap the patient in dry blankets and commence rubbing the limbs upwards, firmly and energetically. The friction must be continued under the blankets or over the dry clothing.

Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet. Warm clothing may generally be obtained from bystanders.

On the restoration of life, when the power of swallowing has returned, a teaspoonful of warm water, small quantities of wine, warm brandy and water, or coffee, should be given. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction, large mustard plasters to the chest and below the shoulders will greatly relieve the distressed breathing. Great care is requisite to maintain the restored vital action, and at the same time to prevent undue excitement. Persevere for at least three or four hours.

Do not be discouraged if you do not produce any good effect at once, but persevere. There have been cases of recovery after suspended animation of *five hours*. You will feel it a glorious reward when you see the dead restored to life through your exertions. [The same plan may be used, except removing the clothes, when a person is suffocated with foul air of any description. In this case, too, cold water should be freely applied to the head. And here I would give you a word of caution. Before entering any old well, sewer, or other place where you may suspect the air to be bad, let down a lighted candle into it. If this will not burn, it is not fit for you to enter. Never use charcoal for warming a room when any one is in it. The gas given off when it is burning is so deadly that I have seen a husband and wife suffocated in bed, though the charcoal was placed on the hearth.]

Messrs. Putnam are to be heartily congratulated on having given such a valuable manual to the great public on the other side of the Atlantic.

THE INSANE AND THEIR TREATMENT.

Insanity: Its Causes, Prevention, and Treatment. By William Harris, M.R.C.P., F.R.C.S.E., &c., Resident Superintendent Physician of the Norwich City Old and New Asylum. (London: Wyman & Sons.)

Of late years, more rational views on the subject of insanity have prevailed amongst the public, and Dr. Harris's book will aid the work of instruction in the nature and causes of those brain-troubles, which only too frequently mar the existence of persons in all ranks and classes of society. It is highly desirable that such knowledge should be widely diffused, since the prevention of insanity, as the author shows, is largely a matter with which the public, and not the medical profession, have to deal. Dr. Harris tells us that "We have no proof that hard study alone can induce insanity, and we have still fewer proofs that civilisation is a cause of mental disorder." He maintains that "there are more male than female patients admitted into private asylums, whilst amongst the poorer classes the proportion is reversed." As regards age, the liability to insanity increases with years until about the age of 30; and between 30 and 40 "is the time of life which produces the greatest number of lunatics." Dr. Harris adds the all-important remark, that "early diagnosis and prompt treatment are everything." The very best chance of recovery lies in early attention by the physician to each case. This volume will well repay perusal as an interesting account of maladies which assume a high importance in the lists of the troubles that afflict mankind.

Sanitary Appliances, Etc.

THE GRISCOM MOTOR AND AUTOMATIC BATTERY.

This apparatus consists of a small electric motor, constructed on the "double induction" principle, by which a remarkable increase of power, weight for weight, over other small electric motors is obtained. The motor consists of a "Siemens'" armature, revolving close to and inside the poles of a pair of magnets, bent in the shape of a ring, and wound with copper wire. The size of the motor is about five inches in length by three in breadth, and the weight only 2½ lb. To drive an electro-motor some source of current must be used, such as batteries, accumulators, dynamo-machines, &c. The Electro-Dynamic Company, of Philadelphia and London, whose offices are at Archway House, Bush-lane, E.C., have constructed a battery specially adapted to the motor, and calculated in every way to be used with satisfaction by workers of the sewing-machine, for it is to supplant the treadle, whose use is so detrimental to the health of women, that the Griscom Motor is being now actively introduced in this country. The "Automatic" Battery is made up of six cells, with a board suspended over them, to which the zinc and carbon plates are attached, and, by means of a lever and pedal, can be lowered into the fluid which fills the jars. More immersion of the plates produces more power, and as this can be done by a gentle pressure of the foot, the most exact regulation of the speed of the machine is obtained. The battery is so constructed that a spring automatically raises the plates out of the liquid when not in use, so that all waste

is avoided. The battery can then be left any length of time without deterioration. The price of the complete apparatus to drive a sewing-machine is £6, which includes a handsomely nickel-plated motor, a battery in an elegant ebonised case, with lock and handles, and a bracket, with all necessary wires and connections, and full instructions for working. Any sewing-machine can be fitted with a Griscom Motor in ten minutes. Among numerous

THE MOTOR APPLIED TO A SEWING-MACHINE.

other applications of the Griscom Motor which have received practical endorsement from the public are fans, ventilators, lathes, model boats, fret-saws, dental drills and lathes, &c.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "THE PUBLISHER," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* EDITOR *and* PUBLISHERS *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The EDITOR *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

THE AMBULANCE CLASS AT THE BIRKBECK INSTITUTION.

SIR,—The remarks in your issue of the 9th November with respect to Dr. Cantlie's employment of diagrams in preference to a demonstration on the true skeleton, in the Ambulance Class at the Birkbeck Institution, are very just and pointed.

Permit me, however, as the *founder of*, and instructor to, that class, to say that until this session (when I was obliged to resign my charge in consequence of increased provincial work in popular lecturing), the demonstrations were thoroughly practical, and every advantage *was taken of the skeleton*, which is *in the possession of the Institute.*

I can only say that during my four years' charge no one fainted, either as a volunteer or not, nor was there at any time any feeling expressed but that of intense interest in the physiological and anatomical portions of instruction.

I would mention this merely on behalf of the students (male and female) of this most important institution, who, I am sure, Dr. Cantlie will find to be devoid of "morbid silliness," and truly anxious to learn as thoroughly as possible how to afford help to their suffering fellows.

Very many of my class on "Health" have eagerly availed themselves of the privilege of visiting the museum of the College of Surgeons and other anatomical collections, where I have had the pleasure of personally explaining the objects of importance.—Faithfully yours, JOSEPH J. POPE.

Late Lecturer on Hygiene and Instructor to Ambulance Class at the Birkbeck Institution. Special Lecturer to National Health Society, London.

ELECTRO-DENTISTRY.

SIR,—In your issue of November 2, my notice has been drawn to some remarks by Mr. Boyd Wallis, on my invention of electrical appliances for the mouth, in conjunction with or without artificial teeth.

It appears to me rather strange, if this gentleman has had the experience he states, that he did not bring it before the notice of the profession before.

The plates I have constructed (which are entirely original) are so arranged that a continuous but gentle current is generated, the plate being of such dimension as to not inconvenience the wearer, which is of paramount importance in the adaptation of a base for artificial teeth.

Mr. Boyd Wallis goes on to say, "I may have some opportunities of testing the electro-motive force and strength of current of this minute battery whilst in the mouth," &c., &c.

In reply I may remark that I have already tested the electro-motive force of my Electric dentures, and find it to be in Volts 0·20 with only one pair of elements; this, of course, can be greatly increased when two or more pairs are used.—Yours, sincerely,

J. J. WEDGWOOD, M.D., &c., &c.

QUERIES AND ANSWERS.

[We would direct the attention of our correspondents to the fact that, owing to the necessity for sending HEALTH to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of HEALTH, to address their inquiries to the Publisher, *and not to the Editor.*]

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

FIDO.—Norman's "Insect Destroyer" should be tried. It will not harm the dog.

A MEDICAL STUDENT.—Thanks for your note. If the symptoms were imperfectly and erroneously described (as they must have been, if your account be correct) no surety could be given by you or by any other person for correct treatment. If you will peruse the replies, you will see they deal largely with personal hygiene, rather than with prescribing. On the argument used, every book of family medical advice should as well be burnt. The case you name was correctly enough treated as far as the dyspeptic symptoms were concerned.

INQUIRER.—See description of "Electric Motor" in present number.

SALVE.—We can send you the name of a medical specialist in London who makes such cases a study, if you send a stamped-addressed envelope.

B. GEORGE.—Try Messrs. Churchill.

A DYSPEPTIC.—Dr. Gill's book on "Indigestion" is published by Messrs. Churchill, New Burlington-street, London, W., and costs 4s. 6d.

M. H. NORWICH.—See reply to "Dyspeptic," above.

NELLY.—See reply to "Dyspeptic," above.

RIVINGTON.—1. Pronounced "Mik-ro-kŏkki." 2. "Poupart's ligament" is situated in the groin.

G. Mays.—1. There is no objection to the use of quilts; on the contrary, as expressed in our columns, their lightness and warmth are highly to be commended. All objections are groundless entirely. 2. Send the thermometer to Mr. Dollond, for an opinion. The "index" is a detached piece of mercury, which is pushed up by the ascending column of that fluid, and *remains* to mark the temperature when the mercury has withdrawn into the bulb. 3. The "Breakfast Cereals" can be purchased of Mr. B. Lampe, 44, Great Tower-street, E.C. 4. You probably refer to our "Hair" papers, contained in the early monthly parts of Health.

SANITARY.

B. G.—The Sherringham is preferable. Have you seen Tobin's tubes tried?

A. Coxwell.—Why not give the "wash out" a fair trial. A cistern "waste preventer" should be also used.

Earnest.—A common symptom of bad drainage. See that you have no leaky drains below the basement.

Antique.—In the fourteenth century. Read Hecker's "Epidemics of the Middle Ages" (Sydenham Society).

A. Oswald.—Yes; Parkes' "Hygiene" is a classic work. See that you get the last edition.

E. B. A.—No need to try the second. The first is quite suitable.

MEDICAL.

D. R. Jones.—After scarlet fever the drum of the ear is liable to be perforated, and in your case the presence of the discharge shows this is probably the case. Such cases should be seen by a good aural surgeon, for by various methods they can (unless too far gone) be cured, and hearing restored, either by the natural or by an artificial drum. There is the greater need for such treatment, seeing that cold in the affected ear is liable to cause further mischief. See a good aural surgeon at a hospital, if you are unable to afford the fees. 2. The system is a good one.

F. G.—Your questions are a little too numerous for one communication. 1. Lemon juice is digested and absorbed like every other fluid. In small quantities it is agreeable and healthy as a beverage, well diluted. May be taken simply as an ordinary drink. Acts as an anti-scorbutic and blood-purifier. 2. Cannot say; depends on individual conditions and constitution; good food is certainly indicated, and especially fats and sugars. 3. Give it up if reaction is not sufficient. A cold bath in winter is very risky, without good reaction. A cup of warm tea might assist reaction after the bath. 4. Try tepid water, or cold with the chill off. 5. No use before the bath.

Gardener.—The absence of pain and the transitory nature of the swellings are against any "malignant" idea. We should feel inclined to advise you to persevere meanwhile with your treatment. Your previous history should make you very careful of tampering with any medicines other than those you are taking. Rest after food should be strictly observed. We sympathise heartily with you in all your troubles. Let us hear again about the "swellings." Give up all vegetables for a time. The change from the north should have done you good.

Erne.—You should read our directions to correspondents, and avoid impatience. Your general health must be weak. For the hair-troubles, rub in a little Macassar Oil morning and night, and use a soft brush. Write again if not improved.

Ivy.—Your case is one for careful attention to the general health. See to clothing, generous food, and plenty of rest and sleep. Ten grains bromide of potass taken in water on going to bed every other night, for a few nights, should be tried. You are evidently constitutionally nervous.

Thompson.—Try the following lime pills for the pimples:—Sulphide of lime, two grains; sugar of milk, forty grains. Twenty pills to be made and one to be taken every three hours.

Scalp.—Try the effect of a lotion composed of one drachm of bicarbonate of soda to one and a-half ounces of glycerine. To be applied night and morning; and let us hear if not cured.

An American.—No; typhoid germs are microscopic particles, difficult of detection even by professed microscopists, and at present somewhat indefinite even in nature. Boil the milk thoroughly. Yes; no objection to putting a little Swiss milk (first diluted with water) in the child's food.

M. Sanderson.—Thanks for your letter. Glad to have been of service.

Enquirer.—Try the effect of eating one or two of Bragg's Charcoal Biscuits after food. Avoid suppers, and take a little "Friedrichshall" water or "Æsculap" in the morning for a short time.

Espérance.—Certainly a change would do you no harm; but your ailment is more of mental than physical kind. Try to "settle down;" and you might take a teaspoonful of Fellow's "Syrup of the Hypophosphites" in a wineglassful of water, thrice daily before meals for a time. This is a good nerve-tonic.

E. J. J.—See advice to "Espérance" above. Are you constitutionally nervous? See also to your general health.

Zebedee.—1. Strict attention to general health, and the use of a constitutional remedy such as cod-liver oil, to which syrup of iodide of iron has been added. 2. Cold sponging, if it can be borne. 3. Warm clothing. 4. Inhalations of creosote, or of friars' balsam added to hot water, and the vapour to be inhaled. Add a few drops of either fluid to a pint of hot water and inhale, and avoid cold thereafter.

J. Lucas.—1. Try a little Morson's "Pepsine" along with the food for a time. 2. No; not when properly cooked. 3. Depends on quantity of water and state of stomach. Large quantities of water drunk along with food are prejudicial to digestion. 4. Occasionally a glass or two of good claret diluted with water is an aid to digestion. 5. Attention to all details of health—from pure air to state of the stomach. 6. No; certainly not injurious at that rate, which is extremely moderate. A fairly robust man should certainly not suffer, but be more healthy from such a practice.

Hope.—By your own account you are a healthy man. Your symptoms are exaggerated by a nervous anxiety, and by the quack accounts you have read. See and follow advice to "Carmen" and "W. L. T. B.," in No. 31 Health, and above all be cheerful, and know that you suffer from no disease.

Perplexed One.—We fear not. The use of iodine is simply absurd in such a case. You will only irritate your skin to no purpose. Read our articles on "How to get Thin or Fat." These will be more to your purpose.

Ebor.—Nothing can be done, save the wearing of a well-fitting elastic stocking or bandage. Rest with your feet elevated, and sleep with your feet on a pillow. See also to the state of your bowels, and, above all, avoid constipation.

G.—Will please send stamped-addressed envelope for the address he wishes. We never mention practitioners by name in Health.

Antrim.—Your symptoms point to some irritation which only a careful examination by a physician can reveal. We should suspect the results of some inflammatory action. Your case is one in which, from its nature, we can hardly advise; but, if you wish it, we can send you the address (on receipt of a stamped envelope) of a trustworthy medical adviser in London.

Patience.—The disease you name is of very intractable nature. You might try the following lotion:—Liquor of the subacetate of lead, one drachm; glycerine, three drachms; water, to make up six ounces. Label, "For external use only," and apply as a lotion. Let us hear the result. Use Calvert's "Carbolic Soap" for washing, and see to your general health. A little cod-liver oil after food, all the winter, will do you good.

Harry Thawcross.—Very little, if anything, can be done to cure the results of a nervous temperament. We should simply advise you to see well to your general health. Whatever interferes with your health is sure to act on your special temperament as you describe.

Pressman.—1. We approve of the system. 2. If care be taken to avoid cold, it will do no harm, provided always heart and lungs are sound. 3. The best remedies of simple kind, are the strict avoidance of constipation by the use of a little "Æsculap" mineral water if required; attention to diet, and avoidance of all indigestible foods; the taking a little lime-water with the milk, with a charcoal biscuit or two after food, if acidity be present. Other more direct remedies should only be prescribed by the medical attendant. If the sickness is very frequent, consult him at once. There are preparations which can allay the sickness. Thanks for your good wishes.

Enquirer.—You have no need to fear anything. You are morbidly depressed by quack literature. You should know that you will, with care, recover your health, provided you learn to be cheerful and give up desponding. Sleep on a hard mattress; don't take fluids late at night; take nourishing foods; avoid stimulants; use cold sponging in the morning if you have sufficient reaction, and for a time take a teaspoonful of Fellows' "Syrup of the Hypophosphites" thrice daily in a wineglassful of water before meals.

P. J. G. C.—Eat Braggs' Charcoal Biscuits for the correction of your stomach troubles, and see advice to "Enquirer," above.

J. H. is informed that, as announced in our notices to Correspondents, inquiries addressed on Post Cards are consigned to the waste-paper basket. He is further informed that in our opinion, only a person of extreme stupidity could address inquiries to the "Publisher." The "Editor" is the person to whom all such inquiries (contained in a letter) should be addressed.

Senex.—Try the effect of the tonic recommended to "Enquirer," above, in conjunction with hot salt baths thrice a week, and let us hear the result. You will, of course, give up the opiate entirely in following this advice.

W. Martin.—A little of the oil should be rubbed in with the fingers well into the roots, night and morning. Write to Mr. Browning, 63, Strand, for his spectacle-measuring apparatus. This is a safe method of suiting the sight.

S. I. Everton.—The removal of scars is an impossibility under ordinary circumstances. In future, prevent the scars by having the boils opened carefully and treated by a surgeon. You might try what the application of Vaseline to the skin may do in the way of promoting the skin-growth.

S. H. H.—Try the following lotion:—Friars' balsam, one part; rose-water, 20 parts. Apply as a lotion to the face. Use internally the following:—Sulphide of calcium, 24 grains; sugar of milk, half an ounce; mix and keep in a well-stoppered bottle, and take five grains, or as much as will cover a sixpence, every four hours. Give up tea and all other stimulant liquors. The powders may effect a cure without the lotion, and should be tried first.

Paul Caffière.—In such a case as yours we should feel inclined to thoroughly examine into your general health. Such a disease is as often as not a symptom of lowness of constitution. Try the effect of cod-liver oil, and for the ringworm use the following:—Perchloride of mercury, four grains; rectified spirits of wine, four drachms; water to make up two ounces. Label "Poison. External use only," and rub into the affected parts night and morning.

H. C. Grateful.—So long as the present symptons continue, dress the broken surface with glycerine of borax, attend strictly to cleanliness, rest as much as possible in every way, and take the following:—Iodide of potash, two drachms; infusion of calumba, six ounces. A dessert-spoonful thrice daily. Let us hear how you are in a week or two.

M. D.—You should give up the bath and try, experimentally, the effect. Take a dessert-spoonful of cod-liver oil thrice daily after food, or cod-liver oil emulsion, if that will suit you better. Let your diet be generous, and rest as much as possible. As you say you are in good health, you must rely on diet and rest.

Clapham.—You suffer from chronic nasal catarrh, for which you will find a thorough change (say to the sea in the south) do you good. You must see to your general health. Take cod-liver oil, with syrup of iodide of iron added; and let your diet be generous. Clothe warmly; and as a local remedy try inhalations:—Twenty to thirty drops tincture of iodine may be placed in two pints of boiling water, and the vapour inhaled for five minutes morning and night.

Despair.—Yours is decidedly a case for a careful examination by a consulting physician. You should not delay in obtaining such an opinion, as it may relieve your mind to know exactly the nature of your symptoms. We can send you the name of a London physician (on receipt of a stamped, addressed envelope), if desired. Your case requires thorough examination, and full and detailed directions for treatment.

Purlin.—The numbers given are mere proportions; any druggist will compound you the lotion from these proportions. The "℞" before a prescription means "recipe"—"take" of such and such things. We do not know the composition of the "Restorer;" if it contains lead, you would get a yellow deposit on adding iodide of potass solution to it.

T. K.—Cleanliness, frequent change of underclothing, and the use of a saturated solution of boracic acid as a lotion for the odour. In such a case as yours, we should also feel inclined to order a tonic, such as that recommended to "Enquirer" in present number.

Despondency.—You are in a nervous condition, but the exact cause is difficult to discover. Generally it is safe to say that in such a case as yours, any derangement of the general health is certain to intensify natural nervousness. As a preliminary measure you should try the tonic recommended to "Enquirer" in present number, and let us hear how you are in a week or two.

J. F. J.—Your cold is at the bottom of your troubles, and any derangement of health is certain to bring back your complaint. Your only hope of getting rid of it quickly is in the full improvement of your health. Rest as much as possible, and clothe warmly; avoid exertion and all stimulants; and take ten drops of "*Fer Bravais*" thrice daily for a time. A weak injection of "Condy's Fluid" (1 to 20 water) may be used occasionally.

Anxious.—We believe there is an institution for the cure of stammering at No. 9, Old Bond-street, London, W. Reading aloud, slowly and deliberately, or chanting your words, have been recommended as a cure.

Nil Desperandum.—All your symptoms are of a nervous nature. Take the tonic recommended to "Enquirer" in present number of Health, for a week or so, and note the result. You might take a little Morson's "Pepsine" with your food, and see carefully, in any case, to your digestion. If not bettered you should see a consulting physician, and have yourself thoroughly examined. Our opinion is, that your symptoms are those usually of nervousness, which rest and a more robust state of health will cure.

T. H.—Possibly lead paper would be blackened if sulphuretted hydrogen were present in quantity. But it is folly, at any cost, to remain in doubt where sewer-gas is suspected. Trace the drain connections and have the place inspected. Frighten the employer, justly enough, with a tale of typhoid fever as the result of defective drainage.

Omega.—See (and follow) advice to "Enquirer" in present number of Health. If not better, write again.

Carlton.—No; the spray is merely an application for the throat alone. There seems nothing wrong otherwise, from your account, and you are in good hands. Persevere with the treatment.

J. Beckley.—Your case is one we sympathise with; but we think you are decidedly inclined to be over-anxious. If you could get a month or two at the sea—say Yarmouth—you would benefit from the change. You are evidently constitutionally nervous, and require rest and freedom from worry more than medicine; but we should recommend you to try the tonic recommended to "Enquirer" in present number of Health, and "be temperate in all things," and avoid all irritation and worry as far as possible.

W. Kaye.—The box battery you have bought is apparently an efficient enough electrical apparatus.

H. A. R.—Smoke less, and be careful as to diet. Take a little "Æsculap" water occasionally in the morning, and try cold sponging, if you have sufficient reaction. Give up all stimulants, and give abstinence a trial; and, above all, don't dabble in patent medicines. Your case is one simply for the wise regulation of diet. If not better, write again.

T. M. E.—A common case, but eminently curable. Read and follow the directions given to "Enquirer" in present number of Health. You must also rest, and avoid overwork. You seem to have been most injudiciously "pushed" in your education. All your symptoms will disappear with care, and attention to the advice given.

Kezia.—1. See to the state of the child's bowels. Irritation (by worms or otherwise) is often the cause of the symptoms you name. 2. Generous dietary at large, including plenty of sweet milk. 3. Not, if the throat is sound, and the smoking not excessive. 4. Any good druggist can compound a cod-oil emulsion.

Arthur.—Take a little "Æsculap" mineral water in the morning for a time, as a cure for your liver-trouble. The acne, &c., is only a symptom of poorness of blood, for which take 10 drops of "*Fer Bravais*" thrice daily in water. You must take moderate exercise, and have fresh air also. No drugs can cure you in the absence of pure air. Write again if not improved.

Rogatus.—Ordinary generous diet; no stimulants. The treatment can only be carried out under the surveillance of a physician. It is an intricate matter.

W. A. D.—You are extremely foolish to take such a view of your case, and you are evidently inclined to be morbidly fanciful. See (and follow) advice in present number given to "Enquirer"; and know that a cheerful mind is more than half the battle. Glad to assist further, if need be.

T. H.—Try the effect of a lotion composed of bicarbonate of soda, one drachm, and glycerine, one and a half ounces. Bathe the part frequently with warm water, to which bicarbonate of soda has been added. If not relieved, write again.

Champion.—Your teeth are at the root of your troubles, and no remedies can be of any avail until your teeth are seen to. Consult a dentist.

K. B.—The discharge from the ear can be remedied by proper means. You should have it seen to, and the medical man you name is well qualified to treat the complaint, being an ear-specialist. Such cases are eminently curable when treated by such a specialist.

A. Gaubert.—1. Give up the bath, when depressed by cold. 2. Raise the bottom sash three or four inches, and fill up the interval by a block of wood, on which the bottom sash will thus rest. The fresh air comes in between the two sashes.

Dandruff.—Try sponging the head morning and night for a time with a strong solution of borax in water, and apply glycerine of borax at night. A little Macassar Oil may be rubbed in daily, after this treatment has been tried for a time.

H. J. W.—A residence at a hydropathic establishment for a week or two would, we think, benefit you, especially if you tried some of the water applications of the establishment. The pains, we think, are purely muscular, and such a form of treatment is well adapted for their cure. If this advice cannot be followed, please write again.

Charles.—We are inclined to think your present life, with so much travelling and exertion (at your age), is at the root of whatever nervous symptoms you exhibit. The cramps, &c., are all indications pointing to the same conclusion. You should try to arrange for more sedentary work, and for labour involving less travelling, &c. In our opinion, after a trial of our former advice, further medicine is useless in view of the over-work under which you suffer. For the "cramp," try an application of equal parts chloral and camphor, to be labelled "poison," and used as a liniment.

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This should be painted over the painful parts or gently rubbed in. Rest is, however, your sheet-anchor.

Hyperbola.—A common case, with which we have every sympathy. Above all, don't grow morbid; but follow advice to "Enquirer" in present No. of Health, and write again if not cured. Be patient and persevere.

A Sufferer (No. 1).—Try inhalations as recommended to "Maria Kempton," in No. 32 of Health, and see to general health.

H. E. S.—Take a mild purgative (*e.g.* "Æsculap" or "Friedrichshall") on alternate mornings. Let your diet be non-stimulating and vegetable in its nature for a time. Wash with tepid water and Pears' soap, and try the effect of a lotion made of 1 drachm bicarbonate of soda added to 1½ oz. of glycerine. The following pills may also be tried:—sulphide of calcium, 2 grains; sugar of milk, 40 grains; make into 20 pilules, one to be taken every three hours. If not better, write again.

J. Chard.—See replies to "Hyperbola" and "Enquirer," in present number. Be careful and follow the advice given. Glad to assist further, if need be.

Fanata.—Your case is one for a thorough examination by a physician. The "pulsation" you refer to may be a simple matter, but we should advise an examination.

Pedes.—Try the effect of painting the callosities with tincture of iodine daily till the skin is rendered tender. Apply pads of cotton between and under the toes, and moisten the parts with glycerine. See to your boots, and rest as much as possible, keeping the feet raised. Don't cut or pare the parts. Write again, if not cured.

Arsenic.—"Sciatica" is a complex disease as to its origin, and may arise from many and varied causes. Try the following as a first measure:—Iodide of potass, half a drachm; syrup of orange-peel, one ounce; water to make up eight ounces. Two tablespoonfuls to be taken thrice daily. A large blister applied on the back of the thigh, from hip to knee, often does good; and galvanism, or the interrupted current (obtained from a portable battery, to be had at any opticians, &c.), may also be tried. If not cured, write again.

Lex.—The irritation arose from your unwise and too vigorous applications. You were over-severe in your treatment. No evidence whatever of disease from your account. You may keep your mind easy, and apply a little pure Vaseline. Don't be nervous.

Ryan.—We know the work. The author is a quack. There is no

reliable evidence that any of his marvellous "cures" ever had consumption. It is very easy to call anything "consumption," and then to say you have "cured" it. Have no faith in the pretentious humbug.

C. LANGLEY.—The smooth, round, bare spot is a form of ringworm. See to your general health. Take a dessert-spoonful of cod-liver oil (with syrup of iodide of iron added) thrice daily after meals, and apply to the bare spot a lotion composed of pure carbolic acid two drachms, and glycerine one ounce. Label "For external use only."

WITHERS.—Yours is a case in which we think a physician should be consulted. You seem to suffer from one or two symptoms, the causes of which can only be definitely ascertained by an examination of your case.

A SUFFERER (No. 2).—Yours is an affection of common kind. It depends on a variety of causes. Look carefully to your diet—avoid all stimulants, let your food be the reverse of rich, and if a smoker, be very moderate. Strict cleanliness is necessary; and try the following:—Sulphate of magnesia, 1 ounce; carbonate of magnesia, 40 grains; colchicum wine, 40 minims; syrup of senna, 1 ounce; compound tincture of cardamoms, ½ ounce; infusion of chiretta, to make up 8 ounces. Take two tablespoonfuls twice daily. Calomel ointment may be applied at night. Glad to advise further, if need be.

VERITAS.—Take the tonic recommended to "Enquirer" in present number of HEALTH. If not cured, write again. The cod-liver oil recommended to "C. Langley," above, might also be tried. The ear-trouble is probably due to an affection of the drum, which may give way to above treatment.

CHRIST CHURCH.—Try the effect of benzoated zinc ointment, smeared over the part, and then covered with a piece of soft rag. General health to be looked to.

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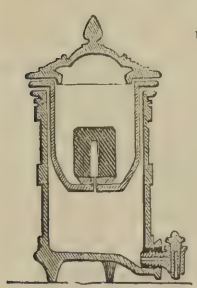

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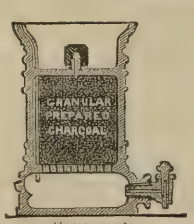

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, NOVEMBER* 30, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THOSE who desire full and lucidly-imparted information on the subject of the "Workmen's Dwellings Acts: their Nature, Operation, and Results," will find, in an interesting paper in the *Citizen*, for Nov. 17, the details they require. The writer of the article, Mr. George Howell, is well known for his candid outspokenness on all questions connected with the welfare of the working classes; and we have pleasure in adding, that a series of papers from his pen on "Public Parks and Open Spaces" will shortly be published in HEALTH.

✣ ✣ ✣

IT would seem as though "the Bitter Cry of Outcast London" is being re-echoed in other great centres of the population. The *Liverpool Daily Post* has recently been exposing some of the social horrors of that city in a series of papers entitled "Squalid Liverpool." We fancy some of the details given in these articles outrival anything which can be told of the London poor. Whole streets in the great sea-port seem to be given up to every force and power that make for misery, disease, and crime. There are places of extensive area, which know nothing of pure air, light, or any human agency tending to advance—beyond, it may be, the occasional appearance of the doctor or the priest. A Roman Catholic priest acted as guide to the writer (or writers) of the articles, and conducted him (or them) in safety through districts of which even the police fight shy. This population, living in the depths of misery and degradation, seems chiefly to belong to the Roman Catholic persuasion; and certainly there is no lack of attention to its wants by the priest of that church. It is terrible to read of one priest after another sickening from the fevers they acquire in the course of their ministrations in Liverpool; and equally sad to think of the powerlessness of all organisations, lay or religious in their nature, to cope with the enormous amount of disease and poverty which lies sweltering in the slums.

✣ ✣ ✣

THE *Daily Post's* story is harrowing in the extreme. We read of little children fever-stricken and lying without the slightest pretence of treatment, medical or otherwise. Houses are described in which neither light nor fresh air are known; and which, rapidly tumbling to pieces, are yet the only shelter thousands of the Liverpool poor can obtain. Of course, drunkenness and crime flourish apace. When we take into consideration the effects of the "breeding in and in" of minds and bodies that have never known what health is or what happiness should be, we can see how the law of inheritance operates to produce accumulated effects that are grim and gaunt enough to make the most sanguine reformer despair.

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AGAIN we say the subject is a national question. It is not one for churches and sects, nor for local societies and small charitable organisations. The work of reforming the slums is one in which municipalities, favoured and aided by the Government, must sooner or later become engaged. Lord Salisbury has spoken, and Mr. Chamberlain, in the December number of the *Fortnightly Review*, has his say in the matter. The prospect of active reform is, therefore, apparently by no means distant; and we may argue reasonably enough that out of the differences of opinion which the leaders of political thought entertain, we may hope that practical suggestions for the cure of these huge social evils will in due course be framed. There is always hope for such an important work in the fact that disagreement opens the theme. Full ventilation of the topic is the more likely to be secured, and reform to be expedited, when there exists a chance of the whole subject being fully and freely discussed.

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WE are glad to observe that a new association under the name of "The Royal National Miners' Life-Saving Institution," has been formed, for the purpose of devising means whereby loss of life in the mining industries of this country may be reduced. The association is to agitate for the ventilation of mines, for the erection of "refuges" in workings, and for the institution in every mining district of ambulance corps. This latter object is one of the most important which can be devised for the saving of life after mining accidents. As in cases of drowning, there is often exhibited a lamentable absence of all ambulance knowledge when a colliery disaster takes place. Men whose lives are spent amidst dangers of no ordinary kind, should be the first to appreciate the value of the information which directs how serviceable aid may be rendered to those who have been injured.

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THE nature of "colour-blindness" and the dangers which may ensue from the unsuspected presence of this affection or abnormality in sailors, engine-drivers, railway-signalmen, and others, have long formed subjects of medical inquiry and comment. The awkward predicaments into which an engine-driver or a sea-captain may be led who is unable to distinguish a red light from a green one, need not be particularised. Dr. Brailey, of Guy's Hospital, London, mentions that a Gravesend pilot, who came to that hospital, who could not distinguish a red from a green spot a quarter of an inch square, at any distance. The Board of Trade, in two years, found twenty-six candidates for officers' certificates who named a red light green and *vice-versâ*. The contention of medical men — that a strict examination should in all cases be held regarding the correctness of the vision of those holding posts in which colour-guides form the means of safety and direction—seems incapable of refutation. It is to be hoped that the system of scientific sight-testing already carried out by Dr. Donders for the Dutch State Railways, will speedily be adopted by all our

home-railways and by the Board of Trade in testing the health of candidates for certificates of seamanship.

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"Colour-blindness" is an affection which varies greatly in degree in different subjects. The inability to distinguish red is said to be the most common form of this affection, and to occur in about five per cent. of men, and in a much lower percentage amongst women. It is also said that loss of the colour-sense for blue and for yellow is an extremely rare affection.

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Our contemporary, the *Lancet*, is ever alive to the necessity which exists for the education of the people in the knowledge which conserves health, and enables us to ward off disease by timely attention to the conditions under which alone our physical well-being can continue. One of its latest warnings deals with "the use and abuse of the 'Mackintosh.'" There exists a popular and, as it would appear, well-founded prejudice against the well-known garment, on account of the great susceptibility to cold which its wear entails. It seems undeniable that the water-proof garment in question tends to confine the perspiration, and to convert the wearer's clothes, as the *Lancet* puts it, "into a poultice." That this dampness of the clothes, produced by wearing a Mackintosh overcoat, may be attended with serious results in the shape of lung-complaints cannot be denied. Damp under-clothing, especially in those with any tendency to chest-troubles, is the most frequent cause of lung-affections; and the caution given—to change the clothes after the Mackintosh has been removed—is therefore worthy remembrance by all who use these wraps, and who are much exposed to the inclemency of the weather.

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Dr. W. B. Carpenter, F.R.S., recently delivered an interesting address on "The Bearing of Temperance on the National Health," in the Sheldonian Theatre at Oxford. The venerable lecturer is not so widely recognised as he should be as one of the earliest temperance advocates who, from the scientific side, showed the fallacy of the statement (long believed in) that alcohol was a necessity for the healthy adult, and that it was of invariable advantage to those who had to undergo severe physical and mental strain. Dr. Carpenter's remarks, regarded as a review of long experience as a physiologist, were highly instructive. They supported entirely the views which have been more than once ventilated in our columns as those concerning which there is now tolerable unity in the minds of scientific men. That alcohol is absolutely injurious to the young, and that it is not a necessity for the healthy adult, are conclusions of undisputed nature. While a third remark, that in certain cases alcohol may be found to possess dietetic uses, seems to be warranted by the experience and testimony of medical science. Needless to point out, this latter conclusion entirely cuts the ground from under the feet of all ordinary drinking customs, and limits the use of alcohol to the wise and regulated purposes of aiding the health in certain states and conditions in which a liability to disorder may exist.

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Original Essays

"Life is not to live, but to be well."—*Martial.*

COTTAGE HOSPITALS.

THEIR FURNISHING.

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

FOURTH PAPER.

"Four long brown walls—a waste of plaster, bare
Save in some ragged prints; a glowing grate;
A flooring half of boards half flagged with slate;
A crowd of bottles; space, and light, and air;
A lean gas-pipe; a table slim and spare,
With bandages and lint; . . .
. . . . . .
This is a ward in hospital."

This picture, drawn by one who long resided amidst the scenes vividly portrayed in the vigorous lines we have quoted, is a sketch of what an hospital ward should *not* be. In the following sentences we shall attempt, in more prosaic language, to lay before the reader our ideal of what it *should* be.

As already stated, we must in this place consider the finishing and decoration of the walls, as well as the articles of furniture of the hospital.

The best material in every way for finishing the walls of the wards is oil-colour. Washing with lime is very often strongly recommended; but this requires to be done at least once a year—a considerable undertaking. Besides, the coating of lime has a great tendency to break and fall off, to say nothing of the ease with which it can be rubbed off; in short, however we regard it, liming is a great trouble. The fixed oil colouring may be cleaned without much inconvenience, and dried at once.

For every reason the tints employed must be warm in tone. Green colouring matters are apt to have a deleterious influence over the health of those who dwell in an apartment where they are used; blue makes the patients look very ghastly; grey, and the whole range of æsthetic tints, are cold and cheerless. Ruddy hues of varying shades on the other hand have a warming and cheering effect on the patients. A deep cream or pale salmon tint is at once useful and pretty for the upper part of the walls, especially along with a maroon or chocolate dado, the ceiling, of course, to be white.

While speaking of the walls, it may not be out of place to bestow a word or two on the matter of pictures. Every room in the hospital should be provided with them; they are a source of great interest to the patients, and are of use by keeping them from brooding over their troubles. They must be possessed of artistic merit; but in this age, when art is really within the reach of every one, they need not cost very much withal. Probably those who take an interest in the hospital may be able to supply nearly all that are needed, for it is common to find that large houses have quite an *embarras de richesses* in the way of pictures. The large coloured illustrations of the *Illustrated London News*, the *Graphic*, and the *Pictorial World* are found to be as useful in the hospital as in the nursery, by supplementing the other pictures on the walls.

Many of the texts and mottoes which we see in hospitals are as graceful in design as they are beautiful in sentiment; but others have unsuitable words, and are executed with hideous taste. A word of warning would we venture to give. One of the surgical clerks attached to a celebrated Edinburgh surgeon, on entering his ward one morning,

went up to the bedside of a porter who had suffered on the line the day before. "O' doctor," said the poor fellow, "wull ye tak' that thing awa'?" and his gaze directed the clerk's eyes to a scroll on the wall opposite, bearing in garish hues the Mosaic words, "The Blood is the Life." Such a text as this is entirely unsuited for a *surgical* ward, at least, and we have taken the liberty of relating the experience, as a beacon to guide others. It can be productive of nothing but evil to put up texts injudiciously chosen, and showing in their embellishment a taste akin to that seen in the religious pictures which are hawked through the streets of Roman Catholic towns.

Before leaving this matter of decorating the hospital, it may be well to say how much such an institution gains from the presence of flowers in the wards. As a rule, the patients love to look at them, and find great benefit from them. The young ladies of the district will have little difficulty in organising a Flower Mission.

In choosing the furniture, the aim should be to make the hospital as like home as possible. It must be comfortable, but if it differs greatly from the patients' usual surroundings, they are apt to feel strange at first, and afterwards, on returning to their own abodes, they may be discontented with them.

The garden should have some rustic seats, and the verandah one or two lounges of simple design. In the entrance-hall there will be a mat and scraper, with a small table, and a form for the use of any one waiting. In the hall should also be an alms-box, with some appropriate motto or text.

The day-room, or room for convalescent patients, must be bright and cheerful. Part of its floor may be covered with a carpet, and a couch and easy-chairs should be provided. An essential thing is to have a bookcase and the nucleus of a library. We cannot do better than quote some extremely sensible and fitting remarks from Dr. Swete's book. "A proper representation," he says, "through the clergyman of the parish, or some subscriber, will generally ensure a free grant of useful and entertaining books from the Society for Promoting Christian Knowledge or the Religious Tract Society, and here I would remark that though every bed should be provided with a Bible and Prayer-book, and there should also be a large print copy of each in the kitchen or day-room, yet that, while books of a strictly devotional character should form a portion of the library, it ought not to be restricted to books of religion only. Cheerful reading, as well as cheerful surroundings, such as pictures, flowers, &c., will help the convalescing patient to cast off the natural depression of spirits caused by illness."

"We do not, in the upper classes of society, see the patient recovering from illness or confined to his couch with a fractured limb, always reading the Holy volume or religious books, and yet many expect the poor to do nothing else, and think it is wrong to supply them with any light or entertaining literature. The two excellent societies I have mentioned have more liberal notions. Their catalogues, while they contain no works that can injure the mind, have a large number of cheerful books specially adapted for the working classes. In making the selection, children's books should not be forgotten; indeed, picture-books are a great source of pleasure to children of large growth."

Powneeby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Powneeby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

SIXTH PAPER.

As regards *sex*, obesity is more common in women than in men, and the reasons for this are that women have less mental work and anxiety, less physical exercise, and, moreover, too much nourishment in the case of the middle and upper classes. But when the affection occurs in poor women it is either due to a constitutional tendency, or to the living chiefly upon bread, potatoes, beer, and gin, the starchy and sugary matters of which become readily convertible into fat. Turkish women and many other Oriental ladies become fat at an early age, partly from a transmitted hereditary tendency, and partly from the heat of the climate, and also through the custom of their religion which encourages habits of laziness, so that they pass a large part of their lives in rest, eating, and sleeping. Marriage is said by some to favour corpulence, while celibacy is the parent of thinness, and this they explain by saying that single people are usually more active, fretful, and agitated, while married people have rest and peace of mind. This may be so with some happy couples, who certainly deserve the Dunmow flitch of bacon; but experience would probably teach most of us that the anxieties of married life, its family cares and domestic troubles — to say nothing of certain Caudle-curtain-lectures—would tend rather to favour leanness. An acute though cynical observer may have remarked that if one of a married couple depart this life a change frequently comes over the scene, and should the wife be the departed one the husband fattens; but if the husband perish in the domestic struggle the widow often becomes thin. This kind of cure for obesity and thinness is, however, not permitted by our law.

As a general statement, it is undoubtedly true that of all causes the most powerful for the production of fatness is the ingestion of an absolute or relative excess of nutriment in quantity, or quality, or in both; and if to this be added the other favouring circumstances already enumerated, corpulence is soon established; so it may truly be said that in man, as in animals, it is really a process of artificial, though unintentional, fattening. It must, however, be borne in mind that it is not every one who can become voluntarily fat by gorging with materials which are known to produce fat in others; for the mechanism and chemistry of the digestive organs must also be in a condition to produce more fat than can be eliminated by the organs of excretion.

The *symptoms* of obesity vary according to its stage. In the early condition, one is apt to envy the plump, firm, rounded figure of the individual; in the second stage, as the accumulation of fat increases, envy is turned into laughter, as the rotund contour of the sufferer imparts a comical aspect which is freely commented on by every street Arab. But the condition is more amusing to lookers-on than to the affected individual, as the great inconveniences caused by the increase in size and body-weight, added to shortness of breath, are, in some instances, almost unbearable, though it is an every-day fact that very stout people are usually of merry disposition, as well as jolly

looking. The plump, happy-looking god Bacchus, and the great, corpulent, and popular Falstaff, are well-known comical types of the jovial aspect of obese people.

Fortunately for the bearers of fatty "billows," nature has provided some compensation in the increase of their muscular power and of the perspiring faculty. The former enables them to carry about their weight with more or less comfort, and the latter is a great relief to them after a bodily exertion which would be slight to a slim individual. The gait of stout people is remarkable, and must have been observed by every one—the head held back, the chest expanded, abdomen prominent, and the legs held well apart. All these are results of muscular action so as to bring the line of gravity well into the right direction; and, though the walk of fat folk is usually slow and stately, still I have known many stout people who, in spite of their shortness of breath, have been good walkers, and have been able to trundle over many a mile during the day. But when they reach the stage in which their face is like a full-moon, and when three Life Guardsmen cannot span their waist, then slight bodily exertion gives rise to the greatest inconveniences, and, as exercise becomes more and more impossible, so does the fat accumulation increase. Such people may well say with Falstaff, "A man of my kidney, think of that; that am as subject to heat as butter; a man of continual dissolution and thaw." I have seen a large number of fat folk, and know well a gentleman weighing 23 stone who will not undergo any treatment; but I have never seen any one so stout that—as the saying goes—it takes a week to walk round him.

The shortness of breath, which is a great trouble in this malady, is not due, at any rate in the early stages, to changes in any important organs, but is a functional affection, and is generally due to an increase of size of the abdominal cavity and to a pushing up of the diaphragm or midriff; and, on the other hand, to the greater resistance of the abdominal walls and midriff to inspiratory movements. In the latter stages, when the heart is surrounded by fat, and possibly becoming itself degenerated, the shortness of breath is a very serious symptom, and requires the greatest care in treatment. If the liver be degenerated, or if gout or diabetes complicate the affection, and especially if anæmia—*i.e.* poorness of blood—be present, which is very commonly the case, then the symptoms of these affections become superadded to those already mentioned, and the look-out is a very black one. But quite apart from these common complications, fat people are constitutionally weak mortals with lax tissues, and prone to several intercurrent diseases which they can ill withstand.

Mutilations of the Teeth.—Ethnographers who have minutely described mutilations of the teeth in other parts of the world have said nothing of a similar practice among the natives of the two Americas. The practice is not common in the western world; and it is a little singular that people who deform to an extraordinary degree their lips, noses, cheeks, and ears, respect the integrity of their teeth. The historians of this practice overlook the abrasions noticed by Vancouver among the Indians of Trinidad Bay, and by Petitot among the Tchiglits at the mouth of the Mackenzie and of the Anderson. Finally, no notice is taken of dental mutilations formerly in use in Mexico and Yucatan, upon which Sahagun, Landa, and Mota Padilla have furnished information. M. Hamy has gathered from the last-named writers their allusions to these subjects, and prepared an illustrated monograph. The drawings indicate both filing and perforations.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

FUNGI.

By W. Roberts.

Of the lower forms of vegetable life, fungi, represented by the mushroom-tribe, are by far the most important, both for good and evil. The amount of stupid prejudice displayed towards them as a whole is astonishing: so far from being misunderstood, this large class is not understood at all.

It is not our intention to deal with the subject commercially, but a few remarks on their value from an economic point of view will probably be opportune, and also serve to remove a little of that almost universal disreputable stigma which is both intolerable and unaccountable in these our boasted days of "light and leading." It is impossible to conjecture an estimate of how much valuable and really important food is annually allowed to waste from the most fallacious of reasons.

"Although," says Prof. Church,* "the value of cryptogamic plants generally is ill-understood, and especially is the real nature of several kinds of fungi, which have been eaten safely, still in some measure doubtful, yet a delicate and agreeable flavour is possessed by mushrooms, and their chief constituents have been ascertained as follows:—

	In 100 parts.	In 1 lb. oz.	grs.
Water	90·0	14	175
Albuminoids, &c. ...	5·0	0	350
Carbohydrates, &c. ...	3·8	0	266
Fat.....	0·7	0	49
Mineral Matter	0·5	0	35

The same writer also states that "Mushrooms, when dry, contain half their weight of nitrogenous matter." No other vegetable, it may be remarked, contains so much flesh-forming matter. It is, of course, understood that edible fungi of any sort are not to be eaten alone.

Dr. Badham and other botanists have denied the existence of any poisonous fungi in this country, and they account, it has been remarked, for the effects which are often produced by eating varieties different from our common species by stating that some people, through peculiarity of constitution, are injuriously affected by all fungi. In support of this statement they instance the well-known fact that some people experience the most unpleasant effects after eating the common edible mushroom, which chemically contains noxious ingredients. "We all know that idiosyncrasy of constitution may account for much and for very strange phenomena. For instance, oysters are almost poison to some persons, while roast beef will cause hysterics in other cases, and to not a few, certain odours, harmless in themselves, are causes of serious attacks of illness."

Accepting the foregoing statements as truisms in the abstract, it cannot be denied that a great number of fungi are poisonous, and some virulently so, from a practical point of view, which, indeed, so far as we are concerned, is above all the most important. The question now arises as to the most trustworthy means of discriminating the edible from the poisonous. It has been facetiously suggested that an emphatic test in the case of a doubtful species would be to eat; if death result, it may be safely inferred that the fungus is poisonous, to be discarded consequently in future,

* "Food." (Chapman & Hall.)

and *vice versâ*. While admitting this to be a very easy way of settling doubt, it is open to some objection on the score of its advisability, and a probable want of human aptitude.

However, we have, in common with the best authorities, found the undermentioned rules to be, so far as they go, sufficient to prevent mistakes. All having the following characteristics are poisonous :—

1. Such as have a cap very thin in proportion to the gills.
2. Such as have the stalk growing from one side of the cap.
3. Those in which the gills are all of equal length.
4. Such as have a milky juice.
5. Those which speedily melt into a dark, watery fluid.
6. Every one having the collar that surrounds the stalk filamentous, or resembling a spider's web.

But, to these rules, several conspicuous exceptions could be named ; and we would urge very strongly that no doubtful or even questionable species should be experimented with, until a small general knowledge of the subject be acquired. In addition to the foregoing rules, we would remark that it is inadvisable for the uninitiated to gather from other than in open fields, where, and only where, the common mushroom (*Agaricus campestris*) occurs.

When cooking, it may be easily seen if poisonous fungi are present. Take half an onion, stripped of its external skin, and boil it with the mushrooms. If the colour of the onion is changed, and it becomes bluish or tinged with black, it is an evident sign that poisonous fungi are present. If the onion preserves its colour there is no danger.

"In case of poisoning by fungi, vomiting should be immediately induced by an emetic and tickling the fauces (back part of the mouth) with the finger or a feather ; after which a purgative clyster or a strong cathartic should be administered, with ½ to 1 fl. drachm of ether in a glassful of water, or weak brandy. As an antidote, a solution of tannin, ½ dr., in water 1½ pint, or a decoction of ½ oz. of powdered galls, or of 1 oz. of powdered cinchona bark, in a like quantity of water, has been strongly recommended by M. Chansarel."

Tobacco-juice Vapour for Plants.—The vapour of tobacco-juice has been tested in France as an insecticide in greenhouses with great success. Instead of burning or smoking the tobacco, which is a very offensive process to some persons, the tobacco is made into an extract by soaking or boiling ; and the juice is then placed over a chafing-dish, a fire, or the flame of an ordinary lamp, and deposited in the greenhouse or conservatory. Delicate plants, which are very sensitive to smoke, are not injured by this vapour, and it leaves no offensive atmosphere, while it effectually disposes of thrips, lice, scale insects, and slugs. One quart of tobacco-juice vaporised in a house containing three hundred and fifty cubic feet is an ample amount.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HOW TO CLOTHE CHILDREN.

By Ada S. Ballin.

Clothing is one of the great powers which preserve or destroy health. Its influence is unceasingly felt from birth to death. Nay, even before birth : for errors of dress in the mother may seriously injure the child. Too heavy, too thin, or uncomfortable clothes worn by the mother, in lowering the general tone of her health, will harm the child indirectly, while tight-lacing, or the undue pressure of her garments, may directly produce deformity in it, or interfere with its circulation.

The first danger the new-born infant has to encounter is from cold. It passes from a high and almost unvarying temperature to one very much lower and exceedingly changeable. The younger a child is, the less able is it to resist cold, because the smaller it is the larger is its surface relatively to its bulk ; for the area of a body varies as the square of its dimensions, while its mass varies as their cube, and the surface of the human body is an evaporating surface—consequently a cooling one. This accounts for the fact that though the adult parts with its heat less rapidly than the infant, when that heat is once lost there is more difficulty in re-establishing it, for the same surface that gives out heat is the means of receiving it, and the the adult's surface is so much smaller relatively to its bulk than is the infant's. The proportion of infants that die from exposure to cold is alarmingly great. As their lungs are especially active, they are more liable to become diseased than any other organs, and the children fall victims to bronchitis, pneumonia, and croup, and, if they do not die, are permanently injured.

From all this it is clear that children should be better protected from the cold—more warmly clad—than grown people. But what do we find when we look around us ? Herbert Spencer said years ago, "What father, full grown though he is, losing heat less rapidly as he does, and having no physiological necessity but to supply the waste of each day—what father, we ask, would think it salutary to go about with bare legs, bare arms, and bare neck ?" Yet this is exactly what most people allow their children to do, ignoring the fact that even if colds and the more serious diseases I have mentioned are escaped, injury must result to growth or structure—for, owing to the insufficient clothing, much of the nourishment which ought to supply the development of the organism has to be expended in keeping up its temperature. "We have met with none competent to form a judgment on the matter who do not strongly condemn the exposure of children's limbs," says Herbert Spencer. Alas, how many millions are incompetent to form a judgment on the matter ! The warmth of clothing, whether for children or adults, should be regulated by the thermometer, *not* by the season of the year ; and in kind and quantity clothes should be "*sufficient in the individual case to protect the body effectually from an abiding sensation of cold, however slight,*" as Andrew Combe wrote forty years ago.

But even though warm, clothing should never be heavy, nor should it ever restrict any of the natural or acquired movements of the body. Before going into details as to what I consider the most healthy mode of clothing children, I wish to urge the total abolition of what Prof. Humphrey

calls "a sort of baptism to the numerous evils of fashion in dress," to which the vast majority of infants are subjected —viz., the binder, or swather. I cannot do better than quote Prof. Humphrey's words on the subject from his late address at the Congress of the Sanitary Institute of Great Britain :—"Those mischievous two yards of calico . . . . constrict and hinder the expansion of that very region of the body where heart and lungs, stomach and liver . . . are struggling for room to grow and do their work." It hampers the breathing, and—as Mr. E. O. Day points out in his useful pamphlet, "How to Prevent the Diseases of Babyhood," to which I shall further on again refer—may occasion rupture by preventing due expansion of the chest when the child coughs. It interferes with digestion, and when the stomach is distended with food, causes pain by its unyielding pressure. Dr. Humphrey continues :—"A more pernicious device can hardly be conceived than this relic of ancient nursedom, and it is impossible to estimate the number of deformed or pigeon-chests, of hampered stomachs, livers, lungs, and hearts, with their varied attendant life-enduring infirmities and curtailment of life that must result from the use of these 'swathers,' as they are called, for which there is not the slightest necessity."

To continue. "There are," Mr. Day says, "four great faults with our ordinary baby's clothes :—

"1. They are too long and too heavy.

"2. They do not properly fit the neck.

"3. They require the child to be turned over and over in dressing.

"4. They are made to pass over the child's head, and to fasten with hooks or buttons."

To obviate these faults, Mr. Day designed three garments, which were very highly commended at the recent Rational Dress Exhibition, and which are made and sold by Mr. Addley Bourne, of 37, Piccadilly. The clothes are figured in the accompanying illustrations. The first is a fine flannel vest reaching to about four inches below the feet, wrapped round the infant, and tied with tapes. The feet should be protected with knitted socks. The shirt should have sleeves reaching to the wrist, and be made four inches below the vest. The robe is to be made in the same way, but trimmed according to taste, and on this and the shirt small buttons may be used, as the vest will protect the skin from their pressure.

The vest, made of fine Saxony flannel, costs 4s. 6d., made of Welsh flannel for night use, 3s. 11d. The shirt costs 3s. 11d., and the prettily trimmed robe 10s. 6d. With these clothes, dressing is a simple matter. All that has to be done is to lay the shirt on top of the robe, the vest on the shirt, and then slip the child's arms through the arm-holes of all of them together, fasten them up, and you have finished. Thus all risk is avoided of entangling the baby in its clothes or straining it by an unnatural position while being dressed, or making it sick by turning it over and over. These clothes fulfil the two last of the important conditions of healthy clothing which I mentioned just now, inasmuch as they are as light as possible, and do not restrict any of the movements of the body or limbs; but, in order to prevent any pressure round the waist, I venture to suggest that the belt round the middle of the vest, as seen in the picture, should be omitted, as it is quite unnecessary. But, if further fastening should be required, another pair of tapes can be sewn lower down.

The clothes I have just described are admirably suited for summer wear, and can be supplemented for out-of-doors by a cashmere or merino cloak and hood to match. For cold weather, however, more warmth is required than these three garments can give.

(To be concluded.)

Improved Clothes for Infants.

SHORTSIGHTEDNESS: ITS CAUSES AND PREVENTION.

By Henry Power, M.B.Lond., F.R.C.S.Eng.

(From the *Lancet*.)

THIRD PAPER.

There are still other conditions which deserve attention, and amongst them may be mentioned quality of paper, character of type, excellence of impression. Now and again the fount of type of one of our daily newspapers gets worn out, and everyone is aware of the unpleasant effects that are produced by impressions of letters which are partly imperfect—when, for example, *c* cannot be distinguished from *o* or from *e*, when *t* and *l* become confused, and the rounds of *a*, *b*, *d*, *g*, and *p* become filled with ink. Such imperfections are greatly increased by roughnesses and inequalities of the paper, and it is only requisite to read a page or two of one of the cheap editions of a popular author, such as Dickens—though even these are princely as compared with works published fifty years ago—and then a page or two of an *édition de luxe* to appreciate the influence of paper and printing. The introduction of pictures is of decided advantage, since they both excite the attention and relieve the eye.

It would, I think, be useful, especially in cases where there is an hereditary tendency to shortsightedness, to

teach by means of long slips or wall-texts with a picture at the head, sold by most stationers. The child should be placed with his back to the light, and at a distance of from four to six feet from the slip, the separate letters of which, as well as the details of the picture, may be indicated by the teacher with a light wand.

There is good reason for believing that writing has a powerful influence in inducing shortsightedness. Cohn has accordingly made the sensible suggestion that stenography or shorthand should be introduced into schools a little above the lowest classes. The size of the type or symbols is, it is acknowledged, smaller than that of ordinary writing, but not smaller than the Greek. The acquirement of the art is easy, and the saving of time is very great.

The question of the advisability of using slates for instruction in writing has been considered, and, as it appears, there is some difference of opinion. It may be shown that with the same amount of light and an equal degree of sharpness of vision, letters of the same size written with ink and with slate pencil are seen, the former at a distance of four feet, the latter at only three feet, even when the unpleasant reflex from the slate is avoided; and hence with the abolition of slates from schools one condition leading to myopia would be avoided. Weber thinks that many of the difficulties and troubles occasioned by writing are the same, whether slate-pencil, lead-pencil, or pen and ink be used; but still thinks it desirable that after the first half-year pen and ink should be preferred. Cohn agrees with Horner, but suggests the employment of white artificial tablets, made by Emanuel Thieben, a manufacturer of Pilsen, which can be written upon with lead-pencil, and which he has found to be so far superior to slate that writing which can be read at six mètres* on the white slab can only be read at five mètres on slate.

The work performed by girls, especially when very young, is not beneath the attention of the surgeon. There cannot be a doubt that every girl should be taught the use of the needle and thread, and it is satisfactory that this view is taken by the school boards generally throughout England; but it is by no means necessary that the work which is put into their hands should be of a nature to make a severe strain upon their eyes. That such strain applied to the eyes in this particular way is injurious is well-known from the effects of lace-making in Belgium and France, which is admitted on all hands to seriously impair the vision of many workers annually. I find that in moderately fine calico there are about 72 threads to the inch; and if two of these are taken up at every stitch, the work is done to the twenty-sixth of an inch, which is even so very small. But finer kinds of cambric run to 150 or more to the inch, and must be very trying to the eye. Weber observes:—"Who need trouble himself about a girl learning to knit a stocking requiring 35,000 or even 60,000 loops, when the whole article can be finished by machine work in an hour or two?" But, as Cohn remarks, if the girl is, instead of knitting stockings, occupied with Greek characters or conic sections, she is not much better off. On the whole, it appears that no child should be given work to do which requires to be held closer to the eye than one foot, and with this all due care should be taken in regard to light and other particulars.

From all this we may conclude that children, especially at the age of from ten to seventeen, should not be overtaxed, and that girls in particular should not be pressed to work at periods when they are naturally languid and exhausted. The work to be done should be mainly done in school, night-work and night-lessons should be short. Nor should children be made to do much work in the morning before breakfast, nor immediately after food. The books that should be given to young children ought to be light to hold in the hand; the paper should be clean, white, and smooth. The letters should be large in proportion to the youth of the child, well formed, and well printed. The spaces between the lines and the interspaces of the words should be relatively wide. The lines should not be too long. The light should be abundant, and should enter from the left. In writing, he should sit upright and square to the desk. The desk itself should be inclined, and there should be a due proportion between the height of the desk and the bench or stool on which the child is sitting. Reading small print by a dim light is to be discountenanced, and reading should not be permitted in bed. The work given to girls to learn sewing should not be too fine, and no black work should be given, especially at night.

* A mètre is 39·37 inches.

Danger from Flies.—Dr. Grassi is said to have made an important, and by no means pleasant, discovery, in regard to flies. It was always recognised that these insects might carry the germs of infection on their wings or feet, but it was not known that they are capable of taking in at the mouth such objects as the ova of various worms, and of discharging them again unchanged in their fæces. This point has now been established, and several striking experiments illustrate it. Dr. Grassi exposed in his laboratory a plate containing a great number of the eggs of a human parasite, the *tricocephalus dispar*. Some sheets of white paper were placed in the kitchen, which stands about ten mètres from the laboratory. After some hours, the usual little spots produced by the fæces of flies were found on the paper. These spots, when examined by the microscope, were found to contain some of the eggs of the tricocephalus. Some of the flies themselves were then caught, and their intestines presented large numbers of the ova. Similar experiments with the ova of the *oxyuris vermicularis* and of the *tænia solium* afforded corresponding results. Shortly after the flies had some mouldy cream, the *oïdium lactis* was found in their fæces. Dr. Grassi mentions an innocuous and yet conclusive experiment that every one can try. Sprinkle a little lycopodium on sweetened water, and afterwards examine the fæces and the intestines of the flies. Numerous spores will be found. As flies are by no means particular in choosing either a place to feed or a place to defæcate, often selecting meat or food for the purpose, a somewhat alarming vision of possible consequences is raised. Dr. Grassi invites the attention of naturalists to the subject, and hopes that some effectual means of destroying flies may be discovered.—*British Medical Journal.*

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

CONCERNING CLOSETS.

By H. T. Munday, C.E.

In a previous number (14) of this journal some general remarks were made intended for the benefit of those householders who desired information which might help them to understand how far their sanitary arrangements were satisfactory or not. It is proposed to supplement those observations by more particular reference to water-closets.

Some form or other of the apparatus as we know it now has undoubtedly been in use for centuries, and Mr. Baldwin Latham goes so far as to think that the summer palace of Eglon, King of Moab (mentioned in the Book of Judges) was, in point of fact, a water-closet. However that may be, certain it is that contrivances resembling our own have been discovered in the buried city of Pompeii, and it is obvious that wherever an abundant supply of water existed, its employment for the purpose of removing foul matter would readily suggest itself. And here it may be observed that for great cities the proposal to adopt the dry earth system is inapplicable. Much has been written on the subject, and figures for and against have been manipulated with the usual zeal of specialists, but without entering into details it is manifest that the immense labour necessarily involved in providing and drying the required quantity of earth for consumption and its subsequent removal in pails and carts at frequent and stated intervals, obliging continual and unpleasant intrusion into private houses, would be sufficient to condemn it when attempted on an extensive scale—at any rate in European cities. It must not, however, be supposed that by these remarks any aspersion is intended to be cast on the dry-earth system from a sanitary point of view; on the contrary, it is certainly the best method known to us for the effective defecation of excreta and urine, and when the conditions are suitable, and good slop-water drainage provided, the question of the disposal of sewage is solved as effectually as our present knowledge permits. In the city of Assuncion, Paraguay, no deep sewers exist. The excreta is collected in pails, the ashes of the house being mingled therewith, and the whole removed weekly by scavengers, who either empty the contents into the river below the town or otherwise dispose of it. The slop-water flows by open channels into a gutter in the centre of the road, where no doubt it is frequently washed down. Defective as these methods are in detail, they are sound in principle, and, as far as the town in question is concerned, fevers are said to be practically unknown there.

Returning, however, to the subject of water-closets, it is not necessary to give a further description of the "pan" type; that has already been done (see No. 14). The foul air which rises from this apparatus when the handle is pulled up, sufficiently condemns it. Frequently a loud sucking noise is heard in this closet, and the trap is suddenly left dry. This arises from the tight joints which do not admit the air sufficiently to fill the vacuum left between the D trap and the one in the basin. To obviate this plumbers pierce a small hole in the container in order to admit air, the consequence being that foul air is perpetually being ejected beneath the closet seat. This contrivance, accompanied as it always is by the D trap, is a regular den of filth and corruption. Unfortunately, too, it exists in nearly every house, and therefore every one caring for their health should refer to the remarks in No. 14, and take immediate steps to have the foul "pan" closet removed from their homes as speedily as possible. Owing to the way in which it retains filth, it is peculiarly dangerous when any infectious fever prevails, as the contents of the slop-pails when thrown down do not pass off properly under the influence of the flushing water, but lie and rot in the traps and container. Hardy working men employed to take out these closets after years of use, have been rendered seriously ill by the offensive and dangerous nature of the job, and yet people of wealth and position would often sooner spend a hundred pounds on some new article of furniture for their drawing-room than ten to rectify an abuse that is hidden and concealed. Ladies will fuss and fume about a speck of dust on walls or windows, and yet dwell with placid unconcern over leaking sewers, filthy sinks, and drink water out of cisterns that are never cleaned, and whose overflows connect directly with the town sewers. Truly the old proverb stands ever good: "What the eye does not see, the heart does not grieve for." The female portion of our population should be particularly watchful over these things, their sedentary life and sensitive frames rendering them more susceptible to the consequences of sanitary defects than is the case with their husbands and sons, whose more active careers do something to lessen the danger to which, however, all are exposed.

(To be concluded.)

Lumbago may be quickly relieved (*Scientific American*) by binding a piece of oil-skin cloth, such as is used to cover tables, over the loins outside of the flannel shirt. Profuse perspiration is produced, which rapidly relieves the pain.

Health and Beauty.—Were it a question merely between one's own health and one's own beauty, I have little doubt that the majority of women would sacrifice health; but we are so organised that there is no injury to the outward which does not affect the inward, no secret wrong that does not break to the surface sooner or later in ugliness. In order to be beautiful we must be healthy; in order to be healthy we must never thwart nature: and if our folly interferes however remotely with our power of breathing, taking sufficient exercise or common precautions against cold, &c., the result will fall on our own heads sooner or later—and the later the worse—in some ugly form.—*Mrs. Haweis.*

The Kitchens of the East.—The author, during his travels in Eastern Asia, had made some observations on the cooking apparatus there in common use. The Japanese largely employ a mere fireplace, over which the vessels containing food are suspended by hooks; they have, however, two or three kinds of regular stoves of different designs. In China, stoves of a definite character are in use; one was found in Canton which was very elaborate; it was long, and had numerous openings. In Singapore there appears to be only one kind of stove, and it is of decidedly primitive construction. In fact, it is little more than a rough trough filled with earth and sand, on which are laid rough stones selected with reference to pots of various sizes; and the fire is built among the stones. The kitchens in which these constructions are found are invariably very dark and dirty. In northern Java the author found a stove made of arched clay, as half an earthern pipe would be if cut through the axis of the cylinder. This half-cylinder is set with the open part down, and fire is built under its arch. Holes are cut through the crown of the arch, to hold some of the pots, while others are merely set upon the surface.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecturer on Anatomy in the Edinburgh Medical School.*)

V.—ROWING, RUNNING, "FIVES," &c.

Passing now to the next on our list, we may briefly consider rowing. We say briefly, because, admirable though it is as a form of exercise, the available conditions are necessarily limited, so that only a privileged few can take advantage of it. The exercise is chiefly for the muscles of the legs and back, and to a less extent for those of the chest and arms. One advantage of it is that there is little risk of bruises and sprains; the amount and degree can be regulated to suit the requirements of different individuals, while its symmetrical exertion—as in sculling, or by changing sides in a larger boat—is of much benefit to those whose physical training has previously been deficient. It is the standard form of exercise for the students of Oxford and Cambridge, as well as in some of the public schools, and has been proved by hundreds of the greatest value. Contrary to what had been supposed, the very severe strain involved by the inter-University boat-race has not been found to have caused any injury to the rowers in the case of those who have been of good constitution to begin with. Dr. Morgan very carefully traced out the after history of the crews of ten of the earlier inter-University boat-races, and found that the lives of the rowers were as long or longer than the average of men, and that their general health had been very good. The only exceptions were in the cases of one or two of naturally weak constitution who had broken down early. Only a few of those who take to rowing as a means of exercise are likely to turn their attention to racing. If they do, let them make sure that their lungs and heart are sound to begin with, and that they do not exert themselves to their utmost until they have prepared themselves for it by careful training and practice. Rowing is a capital exercise, and all who have had opportunities of trying it speak enthusiastically of its delights.

Fives, or hand-ball, is a game which is, unfortunately, too much neglected. This is to be regretted, because it is peculiarly adapted to the wants of those who live in towns, as it only requires three walls and a limited space, needs no grass, and affords most bracing and exhilarating exercise in a short space of time.

The court in which it is played consists of a cemented or paved floor about 30 ft. long by 16 ft. broad, a back wall 16 ft. square, and two side walls beginning at 16 ft. high at the one end and gradually sinking to about 5 ft. at the other. A small, hard ball is used to play with, and the object of the game is to strike the ball with the palm of the hand against the wall so that it bounds back on to the floor of the court for the opponents to strike in a similar way. By using the side walls the ball is made to pass through many angles before it reaches the ground, and in consequence its course is the more difficult to follow. Either hand is used equally, and thus the exercise has the great advantage of being uniform, and bringing both sides of the trunk and chest into action.

With little expense fives-courts might be erected in all our large towns, and their presence would be the greatest boon to lads in shops and offices, who are in close confinement the most of the day. Such courts are much wanted, and if any one could be found enterprising enough to erect them on some spare yard or little-used area, and make a small charge for each game, he would find it an excellent investment for his money, while he would at the same time be conferring a benefit on his town.

In schools, where any of the boys are prevented by ill-health from joining in the football and cricket of their companions, "fives" has been found very valuable as a safe and efficient substitute.

Though the above games and exercises which we have just been considering might with justice be included under the term "athletic sports," still the word has come to refer specially to the various forms of foot-races, and to the competitions in leaping-pole, vaulting, throwing the cricket-ball, &c., which are now so common in schools and among young men all over the country.

They are of advantage chiefly in offering some special form of exercise (running or leaping chiefly), which may be practised by itself till improvement is attained. The short or sprint races, while not testing the respiration so much, require great muscular effort of the arms and shoulders as well as the legs and back; the longer races, on the other hand, bring the respiratory powers into active service, and are tests, to a great degree, of endurance rather than of activity.

The most important thing for all who would take part in these athletic contests is to keep themselves in good health, and have steady and persevering practice at their particular event for a month or six weeks before the competition. Care should be taken to have other forms of exercise as well as the special one required, so as to develope the muscular system all over, and it should be seen that the diet is wholesome and plain. Professional trainers insist on a diet consisting largely of animal flesh, avoiding fats, sugar, and starch as much as possible; but we have no hesitation in condemning this as unnecessary and injurious. Without entering into the scientific reasons against this artificial diet, we may state that we have personally tried it, and found its deficiencies by experience.

Constipation, with its accompanying discomforts, comes on before long, while the general disorder of the system often shows itself in boils breaking out in various parts of the body. The well-known "staleness," or over-training, is as often the result of this erroneous diet as of anything else, although too much practice at one thing generally also contributes.

Unless there is actual disease of some of the important organs, and so long as too long races are not attempted, boys and young men may be pretty freely encouraged to take part in athletic sports. Instead, however, of their being prevented from undergoing what is supposed to be the injurious practice of "training," they should never be allowed to compete without it, understanding by this that their diet should be wholesome and plain, and that their previous exercise should be systematic and thorough for a month or six weeks beforehand.

Cherry Tooth-Paste.—Boil briskly 1 oz. of potassium carbonate and 1 oz. of powdered cochineal in a pint of water till reduced to 12 or 14 oz. When cold, add cream of tartar, 1 oz.; alum, ½ oz.; glycerine, 2 oz.; and water sufficient to make 16 oz. of filtered solution. Add 4 oz. of honey, and set aside for a few days to see if fermentation occur. Carefully mix the liquid with 2 lb. of prepared chalk, 1¾ oz. of orris powder, and ¾ oz. of cassia powder.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

THE HISTORY OF STIMULANTS.

Stimulants and Narcotics; Medically, Philosophically, and Morally considered: by George M. Beard, M.D., Putnam's Handy Book Series. (New York: G. Putnam's Sons.)

Dr. Beard's name carries immense weight with it in the New World, in the important question of which this little volume treats. He has brought within the compass of a handy book, an immense number of solid facts concerning stimulants at large, and has treated the entire subject from a highly philosophic standpoint. The list of authorities consulted, which Dr. Beard gives in his introduction alone testifies to the industry which animated his labours. His own words may be quoted as the best explanation of the aims and purport of the book before us:—

This work, says Dr. Beard, is now prepared in the belief that there is a large and increasing number in this country who have not been wholly satisfied with the manner in which the subject has thus far been treated; who perhaps suspect that something more than witty stories, or stirring songs, or eloquent exhortations are needed to solve a great social problem; who are beginning to feel the propriety and the necessity of discussing a question that is primarily scientific by scientific methods of reasoning; who in the spirit of honest inquiry are eagerly seeking for information to aid them in forming their opinions; and who are ready and willing to attend to facts that are novel, and to listen to views that are directly opposed to their own, and who recognise the need of patience and wisdom as well as of courage and enthusiasm in conducting a great reform.

A very full *résumé* is given of the stimulants and narcotics used by various nations—the "haschish" of the East, the "koumiss" of the Tartars, and the "coca" of the South Americans being duly described amongst the varied products of nature in the way of nerve-exciting substances. Some curious facts are cited in illustration of the sustaining powers of various substances. Speaking of tea and coffee, Dr. Beard says:—

I have always observed that tea and coffee drinkers eat less than those who wholly abstain from these articles. I first made this observation years ago, in my boyhood, when I had, to say the least, no theories to prove on the subject, and when I approached the investigation untrammelled by prejudice. Those who alternate between total abstinence from all these things, and moderate use of them, find very often that, when they totally abstain, they eat more of ordinary food. Thousands there are to whom a cup of coffee is the chief feature of their morning meal. Soldiers and sailors regard the deprivation of coffee as a greater affliction than short rations of meat or bread. The Gallæ, a tribe of Africa, in their long wanderings, sometimes take nothing with them except a bag of coffee and butter, done up in bags about the size of a billiard ball, and one bag-full suffices them for a day.

Of tobacco, he remarks that:—

Its power to sustain the system, to keep up nutrition, to maintain and to increase the weight; to brace against severe exertion, and to replace ordinary food, is a matter of daily and hourly demonstration. I have known convalescents from fevers to be supported for long periods very largely by their quid or pipe. Sailors and soldiers in the war relished the tobacco rations even more highly than their coffee. There are thousands who, in crises requiring great exertion, forego their meals and increase their pipes or their chews.

Speaking of alcohol, Dr. Beard says:—

Its sustaining power in health or in disease is very great. A lady friend of mine, on account of the very severe illness of her son, was obliged to confine herself very closely to the duty of nursing, with great loss of meals and of rest. Owing to intense and long-continued anxiety, she became so reduced that she could eat scarcely any solid food whatever, and for more than two weeks she lived almost exclusively upon lager beer, of which she took some half-dozen bottles daily. This, with now and then a bit of cracker, was her only nutriment. At the end of that time she was not very greatly reduced in weight, and retained a fair share of vigour.

Dr. Anstie, who has written so ably on this subject, cites a number of remarkable illustrations of the power of alcohol to sustain life. An old man of eighty-three years, affected with chronic bronchitis, lived for about twenty years on a bottle of gin a day, and a small finger-length of bread a day. He used no tea and no coffee, but smoked his pipe. A young man, with disease of the heart, lived two years almost entirely on brandy, since nothing else would remain on his stomach. At first, six ounces; subsequently, a pint was given him. "He kept his flesh and good spirits nearly to the last." One child lived on Scotch ale for a fortnight, and another, suffering from marasmus, lived for three months on whisky and water alone. One lady, about twenty-five years of age, lived "solely on bitter ale and brandy and water" for twelve months, at the end of which time she was greatly prostrated, but was not emaciated.

Such exclusive dependence on alcoholic liquors is, of course, to be deprecated, except in peculiar emergencies where nothing else can be obtained, or nothing else can be tolerated. Used in this way, even the milder forms of stimulants will more than likely bring on or aggravate serious organic diseases. There are crises in life when this power of alcohol to sustain the system may prove a signal blessing.

The foregoing facts are highly instructive, and show that, under certain circumstances, stimulants may aid the bodily powers in enduring fatigue in a remarkable manner. Dr. Beard sums up his topic in an equally interesting fashion, and his words are so apropos that we make no apology for quoting them here. Dealing with the question "How shall any individual determine whether he is benefited or injured by the stimulants and narcotics that he uses?" Dr. Beard says:—

A friend of mine once expressed to me the wish that he had a little bell in his stomach which should strike as soon as he had eaten just enough. Such ready-made contrivances for saving thought and care in matters of hygiene are not provided for us in this world. We are left to settle these hard and complex questions by patient and long-continued study of the history of races, nations, and communities; by close and discriminating observation of our personal experience from day to day, and from year to year, and only those who think that health and life, and the usefulness and happiness of ourselves and of all who may succeed us are of little worth, will hesitate to undertake and pursue this method. Mathematics are of but little service in solving this question. The estimates that have been made of the number of ounces of alcohol that can be daily taken, are of no practical value.

The following general considerations, together with the facts already given, may be of service. Nervous temperaments cannot usually bear stimulants and narcotics of any kind, as well as the phlegmatic or the bilious temperaments. Organisations that are generally susceptible to irregularities of diet, to changes of the atmosphere, to the fatigue of over-work, or to mental impressions of any kind, are usually susceptible to stimulants and narcotics. Nervous people, therefore, need to be especially cautious in forming habits of indulgence.

Those who live much in the open air, and labour with muscle as well as brain, can use them more freely than those who live mostly indoors, and are engaged in exclusively mental occupations. Muscular exercise, to a certain extent, counteracts the evil effects of over-use of these agents; but in nervous organisations this counteracting power soon finds its limit. According to Marcet, shopkeepers who live indoors are much more liable to chronic alcoholism than coal-porters, who, although they drink more freely than shopkeepers, yet spend much of their time in the open-air.

Dr. Beard concludes that,

Although it is probable that stimulants and narcotics may exercise a slowly pernicious influence on the nervous system, without giving cause for suspicion by any immediate or temporary symptoms, yet, as a rule, there is little question that in nearly all such cases, close and intelligent observation can detect some evil effects after each act of indulgence. So long as the immediate

effects are good the permanent effects will probably be good; so long as the immediate effects are evil, the permanent effects will be evil. The great problem is to distinguish rightly between those effects that are good and those that are bad. The distinctions already drawn between *stimulation* and *narcosis* will be of service in solving this problem. But there is always room for deception, especially for those who wish to be deceived. In our civilisation continuous vigilance is the price of health, and those who think it too dear, have the choice of dispensing with the luxury. I do not know, however, that this difficulty of determining what does and what does not injure us, applies very much more to negative than to positive food.

The chief value of Dr. Beard's book lies in the thorough and scientific manner in which he treats the entire subject. All who are interested in temperance reform will certainly find food for thought in the pages of this volume, which is no less a valuable contribution to the side of true temperance than to the scientific aspects of a subject of vital importance in every phase of social life.

A PLUMBER'S TEXT-BOOK.

Plumbing: A Text-book to the Practice of the Art or Craft of the Plumber, with supplementary chapters upon House Drainage, &c. By William Paton Buchan (fourth edition), with above 330 illustrations. (London: Crosby, Lockwood, & Co. 1883.

This is an excellent manual of technical nature, and dealing with the various details which concern the plumber in his construction of sanitary house-fittings. The day of rule-of-thumb work in plumbing and house-fitting has happily passed for all artisans who care to boast that they properly understand their trade and business. The plumber who desires the confidence of sanitarians to-day, must be something more than a mere imitator of the ways and works of his predecessors. He must possess an intelligent appreciation of the principles on which house-sanitation is founded, and as he is entrusted with the construction of works on the integrity of which the household health depends, it is clear that the scientific plumber becomes in the strongest sense, the ally of the health-reformer.

Anyone who wishes to see the strides which plumbing as a science and an art has made of late years cannot do better than consult Mr. Buchan's well-illustrated manual. Written in a thoroughly practical spirit, Mr. Buchan's volume should form a text book in all technical classes where plumbing is taught. Masters could not place a better book or a safer guide in the hands of their journeymen and apprentices, and not the least of the merits of the work are its freedom from bias, and its fair method of stating the advantages of the various schemes of sanitary house construction. The section on drainage is especially clear; that dealing with closets is well illustrated; while the general details of the entire subject are in every case faithfully treated and described in language free from dubiety. The popularity of the book, we are glad to see, has created a demand for the present new and enlarged edition.

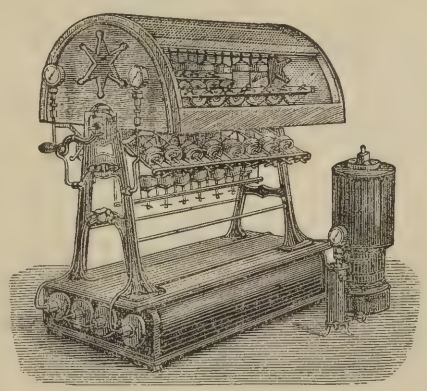
Coloured Inks for Rubber Stamps. — *Blue Ink:* Indigo in fine powder, 10 parts; gum arabic, 4 parts; glycerin, 4 parts; water, 3 parts. Dissolve the gum in water, mix it with the glycerine, and then triturate it thoroughly in a mortar with the indigo until a thoroughly homogeneous mixture is obtained. For *black ink* use nigrosin in less quantity, and add dextrin to stiffen the mixture.

Sanitary Appliances, Etc.

THE BEINS SODA-WATER MACHINE.

The unwholesomeness of ordinary aërated waters, as to which an alarm has again been sounded, may be due to three distinct causes. The water itself may be impure—a defect which is, of course, to be remedied by an improved supply with efficient filtration, or, if necessary, distillation. But whether the water be good or not the drinks may be rendered unwholesome by the use of objectionable ingredients in preparing the different flavours. This also is a matter to some considerable extent under the control of the manufacturer, although improvements in this respect have been rendered less easy by the nature of the process hitherto employed for "aërating" the beverages. Supposing, however, the water to be pure and the drinks to be prepared with unobjectionable materials, there remains the risk—amounting, under the ordinary system of aëration, to something more than a probability—of contamination by lead, copper, and perhaps tin, and also by the vapour of sulphuric acid. This is a matter of more serious import, for it points to inherent defects in the system of manufacture.

The soda-water machines hitherto in use, whatever may be their apparent differences of construction, are all made on the same general principle—that is to say, carbonic acid gas is obtained by adding sulphuric acid to whiting or some other carbonate, and aëration is effected by forcing the gas and water together into a metallic cylinder, and there subjecting them to agitation. The whiting and sulphuric acid may both contain impurities, but in any case a portion of sulphuric acid vapour passes over with the carbonic acid gas, and communicates that sourish taste which is more or less perceptible in water aërated in this manner. Attempts are sometimes made to purify the gas, but the purification is necessarily imperfect. The solution of metals by the water charged with carbonic acid gas—a far more serious matter—is facilitated by the presence of sulphuric acid vapour. As a safeguard against



The Beins Machine.

this metallic contamination, the best makers of soda-water machinery recommend the silvering or tinning of the inner portions of the machine; but the protection thus afforded is by no means complete, for the silver coating is liable in a short time to be worn away mechanically by the friction of the water during aëration, and a coating of tin disappears even more rapidly, while some parts of the machinery cannot be thus protected. Under the most favourable circumstances, therefore, the ordinary system of producing aërated beverages fails to afford absolute security against poisonous metallic contamination.

Our attention has, however, been drawn to a soda-water machine, constructed an an entirely novel principle, which excludes the possibility of either metallic or other contamination during the process of aëration, and at the same time facilitates the introduction of a simpler and purer class of ærated beverages than has hitherto been possible. This machine, to which the International Jury at the Amsterdam Exhibition have awarded the gold medal—the highest award for soda water machinery—is the invention of Messrs. Beins Brothers, of Amsterdam, whose agency is at 27, Chancery-lane, E.C. The main features of the invention are:—

1. Carbonic acid gas is obtained in a pure state from bi-carbonate of soda.

2. The various beverages are aërated in the bottles or "syphons" with this pure carbonic acid gas, and no not come into contact with

metal. They are, therefore, free from all possibility of metallic contamination.

3 The "syphons" are so constructed that even when the waters they contain are being poured out there is no contact with metal.

4. Beverages of different kinds in bottles of any shapes or sizes, as well as in "syphons" can, if required, be aërated simultaneously on the same machine.

5. No steam or other motor is required.

6. The machine is simple in construction, and occupies little space, and the outlay for repairs is stated to be almost nominal.

The following is a brief description of the process:—

To obtain carbonic acid gas, an iron retort (two or more of which are supplied with each machine) is filled with bicarbonate of soda and hermetically closed. It is then placed upon a small stove, so constructed that a single blue gas-flame is sufficient to heat the bicarbonate to about 300° Fahr., and liberate one-half of the carbonic acid gas it contains. The monocarbonate of soda which remains in the retort is saleable at nearly the same price (about £7 per ton) as is paid for the bicarbonate, the proportion yielded being 12½ cwt. to the ton, and the actual cost of the material for aëration is therefore small.

The gas jet being lighted, carbonic acid gas is driven off under high pressure, and is conducted, by means of strong copper pipes, through a refrigerator into an iron or copper reservoir which contains fine dry charcoal. This is done to remove any vapour arising from particles of paper, wood, or straw from the packing which might possibly find their way into the retort and be burned during the process of heating the bi-carbonate. From this reservoir the carbonic acid gas is next conducted, under regulated pressure, into a second or working reservoir by simply turning a cock, the action of which is shown on a dial pressure-gauge. From the working reservoir the carbonic acid gas is admitted at the proper time by means of a second cock into one or more hollow spindles of strong copper. Each spindle has forty-eight small circular holes, which are connected by means of valves of hard india-rubber with the bottles containing the waters to be aërated, the bottles being attached, with the aid of easy running screws, to a frame surrounding the spindle. These bottles may be of glass or stone, of any size or shape, with or without patent stoppers, and "syphons" may also be attached at the same time. The rubber valves allow the carbonic acid gas to enter the bottles, but do not permit any liquid from the bottles to escape into the spindle.

When the full number of bottles has been attached to the spindle, on opening the cock of the working reservoir in which the carbonic acid gas is retained under the desired pressure, the gas is seen to pass into the bottles. The handle is then to be turned which carries round the spindle and the bottles attached to it, the latter protected by a guard. The water and gas are thus violently agitated together, and complete æration takes place in about ten minutes, the time varying with the pressure of gas and depending also upon whether the waters are required to be more or less highly charged.

It will be observed that while liquids of any kind can be readily ærated by this process, it enables the manufacturer to produce simpler and purer ærated beverages than has hitherto been possible. The best kind of lemonade, for instance—that made with lemon-juice, sugar, and water—could not be safely passed through the metallic cylinder of an ordinary machine. But by the Beins system the beverages are prepared in clean wooden vessels; the bottles, previously well washed, are filled with the prepared drinks, and the process of aëration does not affect their quality, or impart to them any trace of metallic or other contamination.

The question of the purity of the water supply itself is one usually left to the soda-water maker's own care. The inventors of the Beins machine, however, state that they are now perfecting an entirely novel and simple process by which ample supplies of distilled water may be obtained at a nominal cost.

THOMSON'S COD-LIVER OIL CREAM.

We have received a sample of this preparation, manufactured by Mr. Thomson, of 40, Dublin-street, Edinburgh. It is an elegant form of emulsion, in which hypophosphites of lime, &c., and pancreatine are combined with the cod-liver oil in a fashion well adapted to suit the requirements of the most delicate stomach. Those who desire a preparation of cod oil agreeable to the taste and thoroughly reliable as a restorative medicine, will find in this "Cream" an admirable substitute for the pure oil. For children and invalids generally, this preparation must be highly commended.

An illustration of stinginess is cited by an Arkansas editor, who knows a man that talks through his nose in order to save wear and tear on his false teeth.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

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All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

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Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

THE LONDON WATER SUPPLY.

Sir,—The time is probably not far distant when the London water supply will once more engage the earnest attention of the millions who are dependent upon it for one of the most essential necessaries of health. It is, therefore, of the utmost importance that statements which are made with a view of guiding public opinion with regard to that question, should be carefully examined.

At a meeting of the shareholders of the East London Water Company, on the 4th ult., Mr. Coope, M.P., is reported to have made the following observations, which have been reproduced within the last few days in one of the daily papers:—

"As regarded the quality of the water, he was happy to assure the proprietors that there could be no doubt upon the point. He might tell them that the directors had not implicit confidence in the reports of Dr. Frankland, who was employed by the Government to test the water supplied to the metropolis. This gentleman had a strong prejudice against all water derived from river sources, and in consequence had made frequent reports, the accuracy of which they had ventured to question. But in order to test these reports the water companies had appointed three scientific men, who had directed their attention for some considerable time to the question of the quality of the water. He alluded to Mr. Crookes, Dr. Odling, and Dr. Meymott Tidy—three very eminent men, who certainly on many occasions did differ seriously from Dr. Frankland. He would mention one circumstance which rather confirmed the view of the directors as regarded the non-reliability of Dr. Frankland's reports. In order to show how very uncertain was the supply from the rivers, Dr. Frankland had invariably referred to the Tottenham well supply as being perfect, and that this should be the criterion of all other water supplied to the metropolis. It was a rather curious circumstance that this well in May last failed to give its supply. The Tottenham Local Board then applied to the East London Company to give them a temporary supply; and from that time to this they had supplied their well with a 4-in. pipe, which had been running continuously. They had supplied them with 20 million gallons of water, or at the rate of 180,000 gallons a day; but they still found every month the same report from Dr. Frankland upon the excellent—the super-excellent—quality of the Tottenham Local Board's water supply, which other water companies (the East London among the number) ought to endeavour to imitate. Therefore he thought they had not been unreasonable in appointing other independent scientific men to confirm or question the reports of Dr. Frankland."

If we refer to Dr. Frankland's reports since "May last," we read in the report for May, the water of the East London Company contained "an exceptionally small proportion of organic matter." In the reports for June and July he says that that Company's water was "exceptionally free from organic impurity;" whilst in August it was "much of the same quality as in the previous months," and in September—the last report which has reached me—it was "remarkably free from organic matter." Taking Kent water as usual as unity, the organic impurity in the Tottenham supply is, on Dr. Frankland's showing, on the average of the above five months 1·62, against East London 2·28. There is therefore chemically no essential difference between the two supplies, and the small contribution of the East London to the Tottenham supply does in no way justify Mr. Coope's conclusions. Even had there

been a material difference, those conclusions should not have been drawn on October 4, since Mr. Coope might have seen in Dr. Frankland's report for August that the engineer of the Tottenham Local Board wrote: "The samples sent you for analysis contained no quantity of the East London Company's water."

Whilst the attempt has thus signally failed to throw doubt on Dr. Frankland's figures, there is, indeed, some evidence that if the latter has erred at all, this is in the direction of leniency towards the East London Company. Let us, for instance, take the reports for September on the water of the seven companies which derive their supply from rivers. According to Dr. Tidy's figures, the average of organic nitrogen, which is the more important constituent of organic contamination, was 0·025 per 100,000, whilst Dr. Frankland found only 0·020, and this notwithstanding that Dr. Tidy's samples were all taken "from works," whilst Dr. Frankland took them from the mains in the centre of the consumers. There can be no doubt that the latter is the proper course, as it takes into account any contamination between the works and the dwellings of consumers. Dr. Frankland, therefore, shows in the river water supply 20 per cent. organic nitrogen less than the company's chemist, and yet we are led to believe that he has a strong prejudice against river water, that his figures are wrong and Dr. Tidy's correct.

Dr. Frankland's average of organic carbon is in excess of Dr. Tidy's, but this signifies little from a sanitary point of view. Leaves dropping into the water increase the organic carbon, but have no influence on health. But here I question some of Dr. Tidy's results. If he had repeated his analysis of New River water, he would certainly have come nearer to Dr. Frankland's figures than the 0·016 per 100,000 he gives in his report. Why, Dr. Bernays, as the company's analyst, found almost four times that quantity even in Kent water!

As regards the principle, whether or not the rivers Thames and Lee are desirable sources of water-supply, we have no doubt reason to congratulate ourselves on the state of the water the metropolis is supplied with. But that congratulation is qualified by the undeniable fact that these rivers above the intakes are daily exposed to pollution, and are daily being polluted by most abominable matter. This is unpleasant; but what makes matters worse is that such pollution can sometimes be traced even in the water after it has passed through the sand-filters. There is, therefore, room for improvement, and, if this can be had at a reasonable cost, we should have it.

F. C. S.

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

Ethel C.—No danger in using the preparation.

Austin G.—Read our papers on the Skeleton.

Interested.—About 98·5° Fahr. See our paper on the "Domestic Use of the Clinical Thermometer."

Arab.—The case was that of an Arab mare belonging to the then Viceroy of India.

Trevor.—No evidence at hand. Apply to the agents.

Juvenile.—Mesmer was a French peasant who claimed supernatural gifts of healing.

Oxley.—No such person known to us.

B. G.—The semi-lunar valves of the heart are two in number. One exists in the left ventricle at the entrance to the aorta, and the other in the right ventricle at the entrance to the pulmonary artery.

S. E. O.—See Smith's Antiquities.

Olgar.—A bone of the skull situated in the eye-cavities.

B. Prentice.—The lowest group of animals is named *Protozoa*, and the *Protophyta* are the lowest plants.

C. A. M.—Bacilli and bacteria are believed to represent lower plants. See our papers on the "Germ Theory."

W. H. Hamilton.—Bourne Hall, Bournemouth, and Westbourne Tower, Bournemouth, are two resorts which might suit you. We fear there are no "homes" of the class you require on the east coast. We have inquired for you, but have not been able to hear of any on the east coast. Can we be of any further service? If so, command us.

Breathing.—Read Dr. Holmes' "Voice, and Voice Production" (lately reviewed in Health): (Chatto & Windus, London), for full information regarding singing in relation to breathing. Yes; the lungs can be well filled by a slow, steady inspiration. In men, the breathing is more from the abdomen than from the chest. In singing, there must necessarily be an escape of air from the chest. You cannot "retain" the breath beyond your capacity without inconvenience, and, in singing, the breathing has to be regulated simply by the exertion entailed by the exercise. There is a book on "Musical Education" by Signor Bach (W. Blackwood & Sons), which you should find of use. If not fully satisfied, specify your difficulties more particularly.

Scissors to Grind.—The bones should be macerated in water for a sufficient time to allow the flesh to become detached easily. They are then to be carefully cleaned and dried. One part water to 2 parts spirits of wine is sufficient to preserve most soft parts.

North.—If you will visit a large ironmonger's establishment, you cannot fail to have your special requirements suited. The "slow combustion" you name is a good stove. As you will have a chimney in your bedroom, there should be no difficulty in your finding a good stove. You might call at 121, Oxford-street, London, W., or write there for particulars (to Messrs. Duncan & Co.) of "De Choubersky's Patent Russian Stoves on Wheels," to burn coke or coal.

Med.—Romanes' "Animal Intelligence" (International Science Series. Kegan Paul & Co.) is the book which will suit you. See also two papers on "Monkeys," by Dr. Andrew Wilson, in recent numbers of *Gentleman's Magazine*. We are not aware that Mr. Huxley has written anything on this topic. His essay on "Animal Automatism," in his "Essays and Reviews" (Macmillan), might suit you.

SANITARY.

Anxious G.—Carbonic acid gas (CO_2) consists of carbon and oxygen in chemical union. It is found in deep mines and wells, and is breathed out from the lungs and skin of animals. In ordinary air it exists in the proportion of about 4 parts to 10,000 of air.

Cecil B.—The flushing system you name is a good one.

Alga.—Attend to the condition of the floors. Are you sure there are no drains in the basement? A cesspool (unknown and unsuspected, of course) would account for the nuisance.

Trip.—Tobin's tubes might suit you.

E. Erskine.—Liability to become coated with deposits, general inefficiency as a trap for gases, and a liability to leakage.

Peter B.—The electric light is your best resource. As you are situated, with steam power at hand, the cost would be trifling.

B. Dillon.—For the information you require, see Parkes' "Hygiene."

A. Baxter.—About 3 per cent., we believe; but this might be increased without danger.

Mesurier.—We highly approve of the Banner system. The principle of having a current of fresh air always in the pipes is the foundation of sewage sanitation.

MEDICAL.

C. Hardwicke.—As you value your children's health, give up dosing them as you have been doing. Give them a vegetable dietary, brown bread, &c. (avoiding tea and coffee), for the constipation. See that their sleeping-room is well ventilated, and give a dessert-spoonful of cod-liver oil emulsion after meals to the delicate child. The others might also be tried with this medicine. In your own case regulate your dietary. Don't eat suppers; see that you sleep in a well-ventilated room, and take a little Morson's Pepsine with your food, as directed on the bottle. Irregularity in feeding is highly injurious.

S. Sellars.—See advice to "Thomson" in No. 33. Health. For the pimples, take the sulphide of calcium pills there prescribed. Be careful as to diet; avoid tea and coffee and all stimulants.

Nosredna.—Try the effect, first, of giving only concentrated foods (such as Brand's Beef Essences and like preparations, and Carnrick's Peptonoids), for a time, to give the stomach rest. Avoid a vegetable dietary for the present, and a little Pepsine may be taken with the food. So far as we can see, there is either some irregularity in diet which you must discover, or the stomach is highly irritable. In either case, the advice as to the concentrated foods, and the rest which may thus be given to the stomach for a while, should be followed. Glad to hear from you again.

Phonetic.—Do you eat late at night? If not, the symptoms you name are of a nervous kind. Try the effect of 15 grains bromide of potass, taken each alternate night for a week or so on going to bed. Write again if not improved. You probably study too much.

Layman.—The nerves of sight, smell, &c., do *not* come from the cerebellum. Your reading is at fault. We are of opinion your symptoms arise entirely from your health in general being below par. You want a more nourishing dietary, and the judicious selection of a pair of spectacles (as by Mr. Browning's method, of 63, Strand, London) would aid you. Give up suppers; but you seem to be in need of generous living, and this alone might, with attention to health at large, relieve all your symptoms.

E. H. H.—A little "Æsculap" or "Frederichshall" water taken in the morning for a time would assist your case. The "bad taste" arises from dyspepsia. Look to your teeth, and, if you smoke, be moderate in respect of this practice. Try also a little "Pepsine" for a time with your food.

Ecossais.—Difficult, from your short description, to say what the nature of your trouble is. Probably the pain is purely muscular, however. Try cold sponging, and brisk friction afterwards, in the mornings. A belladonna plaster, or a slight application of chloroform liniment, might relieve you. If the pain persists, have your chest examined; but the fact that your breathing is in no way implicated seems to point to a muscular pain as the cause.

Canton.—The occurrence you name is not too frequent for a healthy person. You seem to have improved vastly. Leave off the tonic, and continue all your health-precautions, attending closely to your general health in all ways. The hair wash named is a good one.

Harry.—You should know that what you name (as remarked in reply to "Canton" above) is as often as not a sign of health, not of disease. The symptoms you describe are really as much mental in their origin as physical. Be cheerful, avoid all stimulation in food and drink, take moderate exercise, sleep on a hard mattress, avoid suppers, and see to the ventilation of your room. Cold sponging, and brisk rubbing with a hard towel thereafter, should be tried each morning. The tonic should be stopped now, and a little "Æsculap" water taken in the morning if constipation continues.

T. Fraser.—[You are wrong in supposing that we reply to correspondents by letters. We only occasionally, where need exists and where the request is made, send the addresses of reliable medical men to our correspondents.] See advice to "Harry," above. You suffer from no actual disease. In addition to advice there given, take a teaspoonful of Fellows's Syrup of the Hypophosphites thrice daily, in a wineglassful of water before food.

F. W. D.—Read and follow advice to "Harry" and "T. Fraser," above. Be cheerful, and don't despond.

J. G. T.—In such a case as yours, we must respectfully decline to advise you. Along with the medical opinion you had, you should have obtained full advice with regard to diet, &c. Your diet should be plain and not stimulating, and you should avoid all excitement and strain. Consult your doctor again, and he will prescribe a tonic, which you evidently require.

Victor.—Glad to hear you are better. See advice to "Harry," above. By careful living and perseverance your symptoms will in time disappear; only you should bear in mind that all you mention may be, and very often is, consistent with health. Attend to your general health, and all will be well.

Zeno.—We know nothing of the electrical appliances you name. We have no faith in such appliances as advertised; but, if you obtain one and forward it to us, we will be glad to test it for you. We should advise you to wear socks or drawers in bed. The symptoms of chill indicate merely that your general health is a little low.

Annie.—Generous, but not stimulating diet. Take a little "Æsculap" water occasionally in the mornings; try 10 drops of *Fer Bravais* twice daily in water, and apply the following lotion—bicarbonate of soda, one drachm; glycerine, one and a half ounce—to the affected parts. You can be cured, but your general health must be improved. Write again in a fortnight and say how you are.

M. Reynolds.—Apply to the Hospital for Nervous Diseases, Portland-terrace, Regent's Park, London, N.W. You require a thorough examination by a competent physician, who will prescribe a tonic which may relieve or cure you.

A. D. Hunt.—Don't be alarmed. Read and follow advice to "Harry" in present number of Health.

W. M. Foot.—You would be the better for a course of cod-liver oil emulsion—a teaspoonful thrice daily after food. If the phlegm troubles you very much, try the effect of inhaling the steam of a pint of hot water (150° heat), to which has been added a teaspoonful of a mixture composed of one ounce carbolic acid and seven ounces water. If this inhalation irritates you too much, try the effect of inhaling the vapour of a teaspoonful of the following, added to a pint of water at 150° F.:—Oil of pine, two drachms; carbonate of magnesia (heavy), one drachm; water, to make up three ounces. Label each mixture:—"The Inhalation: a teaspoonful to be added to a pint of water at 150°, and the vapour to be inhaled when the cough is troublesome."

Spero.—Try the effect of washing the feet in a saturated solution of boracic acid, along with strict regard to cleanliness. The general health must also be carefully looked to. Write again, if not improved.

Endymion.—You have quite rightly stated your case. Yours is one of overwork and prostration. We should recommend you to take Fellows' "Syrup" for a time as a nervine tonic, and to pay strict attention to your general health. Rest should be your sheet-anchor; and if you take our advice you will rest for a long period and give up all study. Glad to be of further service, if necessary. Don't try a gymnasium at present.

Verax.—Thanks for your good wishes. We should say, don't eat late at night; try to run out, even for ten minutes, as often as you can during the day, for a breath of fresh air; walk to and from business, and counteract the closeness of the atmosphere by exercise. See to your ventilation when at work. If not improved, write again.

Juvenis.—1. We prefer either the powder or fluid. 2. A symptom of stomach derangement usually, but may arise from various causes. Continue the "Pepsine" for a time. 3. "Æsculap" or "Frederichshall" water occasionally, taken in the mornings. Try a vegetable dietary in preference to all aperients.

W. E. J.—As a simple preliminary, try the sulphide of calcium pills, as ordered to "Thomson," in No. 33 Health, and take a little "Pepsine" daily with your food. If this treatment is not successful we shall be glad to hear and advise further.

Birmingham.—A stomachic medicine, intended to allay any pain during digestion, and to relieve acidity. We are not sure (from your copy) if the proportions are correctly written. Probably in the original they are correct enough.

X. Y. Z.—The tonic should be taken for a little longer, and you must look well to your general health. We still believe your symptoms are more mental than physical. In a week or two substitute ten drops of *Fer Bravais* twice daily for the tonic. By curing your physical ailments your nervousness will disappear. You must be the best judge as to whether the hydropathic treatment is doing you good. The simple cold sponge bath in the morning (not wetting the head) is preferable, in our opinion.

M. A. C.—What can we say in answer to your inquiry, save to remind you that the solution of such a question is really a matter of individual responsibility? We quite see your drift, and you have our sympathy. To the first part of your question we reply that where there is a chance of propagating ailments, all the idea of "happiness" is absurd. To your second inquiry, we reply we believe medical experience speaks against the use of such appliances. They have a tendency often to develop disorders, and one French author has been most eloquent over their positive harm. It isn't a question of "morals" at all—we agree with you entirely—it is one of that physical well-being without which "morals" are nowhere. Send us your name and address.

Antiquary.—No; the condition may arise from simple intestinal derangement, having no connection with any zymotic disease. The "mucus" is only the increased secretion of the lining membrane of the digestive tract. We should recommend the occasional use of a mineral water (*e.g.*, "Æsculap" or "Frederichshall") in the mornings. For piles try the tincture of hamamelis. A teaspoonful to 8 ounces of water, and three teaspoonfuls of this mixture to be taken every three hours.

E. Nash.—Try the effect of hot salt baths applied frequently to the knee, as hot as can be borne. Thereafter rub into the knee warm oil or warm Vaseline, and persevere for a time with this treatment. If not relieved thereby kindly write again. You might also try the effect of applying to the knee flannels which have been wrung out of a mixture made by adding half an ounce of carbonate of soda and six drachms of liquor of opium to nine ounces of hot water. Over the flannels put a gutta-percha layer, and a kind of local vapour-bath will thus be given.

Ormond.—You live too freely. Give up all spirits and beer, and try a little good claret (with meals only) instead. For the face blotches try the pills ordered to "Thomson," No. 33 Health. You smoke too much also. The face symptoms are merely indications (and warnings) that your drink and smoking must be curtailed. If you don't follow our advice look out for gout.

R. Richardson.—See advice to "Harry" in present No. of Health. Take for a time the tonic recommended to "T. Fraser," in present number.

Jack-o'-Lantern.—Try the sulphide of calcium pills, ordered to "Thomson," in No. 33, Health. If not improved, write again.

Rectum.—Describe age, habits, health, &c. Your letter is too brief for us to advise upon. Spleen and pancreas have certainly nothing to do with your ailment.

Anxious Provider.—The Condy's "Fluid" (1 part to 10 or 15 of cold water) is the preferable liquid. But bear in mind that the practice is by no means universally approved of. Kindly favour us with your experience of the results in due course. The subject, we agree with you, is an all-important one.

John Smith.—No; not if the general health is good. Use cold sponging each morning.

Philan.—We shall make inquiry and let you know (in Health), when we discover the price and publisher of the work.

A. W.—Try the effect of bathing the feet with a lotion consisting of a saturated solution of boracic acid. Your general health also wants looking to. Take a little "Pepsine" with your food. If not

[*Continued on page* 143.

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improved, write again. You, of course, will see rigidly that the feet are frequently washed, and that your stockings are duly changed. Your symptoms are an indication that your general health wants looking to.

Esperance.—Try the effects (1) of cold sponging applied to the parts every morning; (2), of 10 drops of *Fer Bravais* taken thrice daily in a little water; (3), of careful attention to rest, and to the avoidance of over-exertion. Write again, if not improved. Avoid all stimulants. Injections hurtful.

H. W. H.—1. No; often a sign of health, if general health is good. See advice to "Harry" in present number of Health, and try the tonic recommended therein to "T. Fraser." 2. Albumen consists of carbon, hydrogen, nitrogen, and oxygen, with traces of sulphur and phosphorus.

Repentant.—See advice to "Harry," and also to "H. W. H." above.

C. F. J.—1. We think your mother should undergo an examination by a good physician. The symptoms are not those of liver disorder. 2. Try the pills recommended to "Thompson" in No. 33 Health.

Rattler.—See and follow advice to "Harry" in present number of Health. Take also the tonic recommended to "T. Fraser" in present number.

E. Lewis.—Please send details of your health, habits, &c. Your letter affords us no information from which we can judge of your ailment.

Hope.—Don't be nervous. Take the tonic you name for a week or two, and use the Macassar oil. Write again if not better. You drink too much tea. Try cocoa instead.

Implement Works.—Try a little good claret taken along with your meals only. The tonic might be taken occasionally, but not regularly.

Ivanhoe.—Try the effect of taking a little of Morson's "Pepsine" daily with your food. Live for a time on soups and beef essence (Brand's) alone, and give your stomach rest for a time. Let us hear from you after a trial of this advice.

Dim Sight.—A form of what is known as *herpes:* due to some error in diet or drink. Use a little Carbolated Vaseline as an application; attend to cleanliness, and thereafter, for a time, use plain Vaseline. Take a mild aperient (such as "Æsculap Water") occasionally in the mornings, and avoid all stimulants."

C. CLEVELAND.—1. Try the tonic recommended to "T. Fraser" in present No. of HEALTH for a week or so. 2. Read our article on "Chilblains" in No. 30 of HEALTH.

SENSITIVE PLANT.—Between 60° and 65° Fahr., we think, would be sufficient; heat to be increased, in case of cold or debility, to 68° or so. But the personal feelings should be closely studied. 2. Electrical belt is of no use in such a case—a genuine belt, we mean. Trust to flannel.

F. W. JOHNSON.—You have been needlessly alarmed. No need to fear. See advice to "Harry" in present No. of HEALTH. We cannot recommend the treatment you name.

AN UNCERTAIN ONE.—We know nothing of the belts, but if they are like the majority of the advertised ones, they will be shams in an electrical sense. If in doubt, send the belt, post paid, and with stamps for return, to Mr. Carpenter, 36, Craven Park, Harlesden, London, N.W., who will say whether or not it is genuine. For the pimples, try the sulphide of lime pills recommended to "Thompson" in No. 33 HEALTH.

TOM.—See advice to "Harry" above. You must not grow morbid. Attention to your general health will cure you. Take the tonic recommended to "T. Fraser" in present number of HEALTH, and let us hear how you are after a week or ten days' trial of this advice.

BUDA PESTH.—1. We have no exact knowledge of the "Dispensary"; but from its proceedings believe it to be a quack affair. Write demanding the name of its medical officers. If refused, you will then know it is a quack concern. If names are given, we can let you know if they are those of qualified medical men. No medical men of respectability advertise so. You need only put their pamphlets in the fire if they annoy you (quacks always stick like horse-leeches). Let us hear how you succeed. 2. Prescription may do you you good. We should prefer to try "Pepsine" along with the food.

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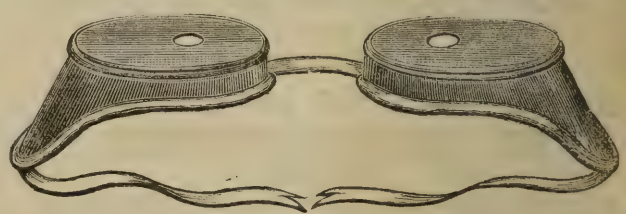

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, DECEMBER* 7, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

An instructive series of cases, showing very clearly the material nature of disease-germs, and teaching us how disease is conveyed from sick to healthy persons, has just been published in a medical contemporary. The cases related were those of diphtheria. The medical man was called on Oct. 24 to see a boy aged eleven years, who had been ailing for two days or so, and found well-marked symptoms of diphtheria. A second boy was seized on the following day (Thursday). On Friday the housemaid was attacked; the cook was affected on the Saturday; and on the succeeding Tuesday another housemaid fell ill. The disease, which thus ran through a household, occurred in a farm-house, separated from all other buildings, and free from all sickness prior to the diphtheria-attack. The nearest house was several hundred yards distant, and a village was situated about a mile away.

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The abrupt outbreak of the disease made it apparent that some very direct mode of infection had been at work in inducing the malady. Hence the medical attendant made it his business to discover the source of the mischief. His labours in this direction were soon rewarded by success. On the Friday preceding the first appearance of the diphtheria (or barely three days before the first boy began to complain of illness), "a woman from a neighbouring village had brought back some needlework from her cottage, which contained at the time two sick children." One of these children died from reputed bronchitis; but as the doctor himself attended the survivor and discovered diphtheria, there seems little reason to doubt that the first child died of this latter disease. The child who died, moreover, had come from a town where diphtheria was raging. Here, therefore, the infection was carried to the farm-house either by the woman from the cottage, or by the needlework which had been executed in the sick-room. The poisonous material had thus been conveyed safely and effectually for at least two miles, and as a result five or six persons were laid down with the dread disease. This case is one which should teach us the ever-present necessity for carefully guarding against the importation of articles from, and against communication with, homes in which infectious disease exists. It teaches also, and still more powerfully, the all-important lesson, that education in health-science is a thing demanded by rich and poor alike. Had the seamstress in the above case possessed the slightest knowledge of health-laws, she would have exercised care lest the disease in her own home should spread to the homes of others.

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The danger of circulating libraries acting as sources of infection has been pointed out over and over again, but it seems needful, in view of recent communications we have received, to call attention once more to the plain duty of all who have charge of cases of infectious disease in the prevention of the spread of such ailments by careful attention to the books with which their patients are supplied. A medical man writes us that recently he saw a scarlet fever patient—whose hands were in the stage at which the skin "peels"—reading a novel bearing the label of a circulating library. He pointed out the danger of such a practice, and adds that he thought his duty would be best discharged, under all the circumstances, by burning the volume—a procedure he carried out. Convalescent patients in such cases should be supplied with literature which, after use, can be destroyed. Disinfecting a book is a tedious process, and one which is much more difficult of execution than most people would imagine. Our duty to our neighbours clearly demands the destruction of the literature, which, handled by fever patients, is singularly liable to disseminate disease broadcast.

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A German scientist has recently been experimenting on the constituents of tobacco-smoke. The smoker will learn with some satisfaction that, judging from Dr. Kissling's researches, the chances of his being injured by the nicotine of his cigar are exceedingly small. The quantity of this substance destroyed in the combustion of a cigar is very small, and, inferentially, we are led to believe that only a trifling amount of nicotine can be inhaled by the smoker. An addendum to this opinion appears to be of somewhat extraordinary nature. Nicotine is soluble in alcohol; and hence it is argued that the use of alcoholic beverages by smokers has a kind of chemical justification in preventing the accumulation of nicotine in the body. Most readers will be tempted to inquire, however, whether, after the alcohol with its contained nicotine is swallowed, the two may not together be absorbed from the stomach into the blood? Even if this latter result be attained, it is well to bear in mind that science has still a grain or two of comfort left for the smoker. Tobacco does not seem to "accumulate" in the system—at least there is no evidence at present forthcoming that the effects of smoking grow and increase in action within the body. It is probable that both by lungs, skin, and kidneys, the tobacco-principles are filtered out of the frame, and injurious effects thus avoided.

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The preliminary details of the International Health Exhibition of London, which is to replace the Fisheries Exhibition at South Kensington, have just been published. The aims of the Exhibition have been thus lucidly set forth in the prospectus:—"The object of the Exhibition will be to illustrate, as vividly, and in as practical a manner as possible, Food, Dress, the Dwelling, the School, and the Workshop, as affecting the conditions of healthful life, and also to bring into public notice the most recent Appliances for Elementary School Teaching and

Instruction in Applied Science, Arts, and Handicrafts. The influence of Modern Sanitary Knowledge and Intellectual Progress upon the welfare of the people of all classes and all nations will thus be practically demonstrated, and an attempt will be made to display the most valuable and recent advances which have been attained in these important objects."

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The Exhibition is to be divided into two main sections —Health and Education. Six groups of subjects are included in these two divisions. 1, Foods; 2, Dress; 3, Dwellings; 4, Schools; 5, Workshops and Factories; and 6, Educational Wants and Appliances form these groups, and present us with a comprehensive programme, serving for the easy classification of exhibits, and for the detailed examination of the various products and inventions proper to each. The exhibits in each department will be large and varied; indeed, there are no subjects which, more readily than Health and Education, lend themselves to extensive illustration. One result of this great exhibition which alone will advance sanitary science in no slight degree will take the form of instruction in the ways and works of our neighbours in health-apparatus, and in means for the prevention of disease. America should be able to show a fair and extensive collection of sanitary appliances, for health-enterprise is active in the States. Germany will doubtless send examples of the work of the scientific sanitarians who have done so much to place health-science on a satisfactory basis in that country, while the free interchange of ideas which inevitably results where different systems are capable of being compared and tested, cannot fail to operate beneficially on all the nations which take part in the exhibition. With H.R.H. the Prince of Wales for President, and with an Executive Council, having the Duke of Buckingham as President, and for members such eminent sanitarians and statesmen as Sir James Paget, Dr. S. Buchanan, Mr. Birkbeck, M.P., Mr. Ernest Hart, Sir Joseph Fayrer, Sir F. Cunliffe Owen, Sir John Lubbock, Dr. G. V. Poore, &c., there can be no question of the representative character of the exhibition, or of the earnestness with which its successful conduct will be supervised. Amongst the executive we must not neglect to note the names of Mr. E. Cunliffe Owen as secretary, and of Mr. Trendall as literary superintendent. Those who know anything of the labour entailed in organising and arranging the multifarious details of such an exhibition will appreciate to the full the labours of the last-named gentlemen.

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"Trepanning" the skull (or "trephining," as the operation is now termed) means the removal from the investment of the head, of a small piece of bone. This operation is performed by surgeons in cases of head injury. A remarkably curious discovery has been made in reference to the antiquity of this operation. It seems that the skulls of primitive men have been found marked and incised in such a fashion as to suggest the frequent performance, in past ages, of "trepanning." The operation was performed in the early days of mankind as a means of escape from the "demons" or "familiars" which, in cases of epilepsy, &c., were believed to have taken possession of the body. The pieces of bone thus removed from the skull were regarded as "charms" of great value, and were buried with their possessor when he (or she) "joined the majority." It is curious to reflect how the significance of such an operation changes its character as the ages pass. That which was the "demon" or "evil spirit" of the past becomes the familiar "disease" of to-day.

Original Essays

"Life is not to live, but to be well."—*Martial.*

STORIES OF SCIENCE AND CRIME.

I.

The story of the pursuit of crime by science, and of the detection of wrongdoing by the art of the physician, surgeon, chemist, and microscopic worker, must ever possess a high interest for all who recognise that scientific investigation is a great power in our modern life. In the present series of papers we propose to lay before the readers of Health, some of the more interesting incidents which have from time to time been chronicled in the note-books of medical jurists. If it is urged that the interest which attaches to stories of this nature is of morbid kind, we can fairly set off against this allegation the fact that the due understanding of what science is able to accomplish in the detection of crime is, in itself, an educative means. Few persons can read the report of a famous, or even sometimes of an insignificant, criminal trial without observing how frequently scientific aid is called in to assist the detective in his search after the evidences of crime. It becomes a matter of purely scientific study when we endeavour to follow out the reasonings of science in its actions as the Nemesis of crime, when, by aid of the unerring logic that is based upon the facts it discovers, science tracks the criminal to his lair and brings his guilt securely home. There is a reverse picture to this latter, however, which must also be noted in our study of the means wherewith science aids the cause of right. The freeing of the innocent, and the elucidation of mystery, are tasks which the medical jurist has frequently to undertake It is no light service to humanity, that, which science discharges when it can ferret out the true causes of the misfortunes of mankind, and relieve the innocent from the stigma of suspicion which may have attached itself, through force of circumstances and the irony of fate, to their lives. Apart altogether from the thrilling and curious nature of the "cases" which fall under the notice of the medical jurist, there is no lack of scientific interest to be found in the details which his experiences bring to view. The byeways of human life teem with records of exceedingly curious nature; and the hale and sound part of humanity may often profitably use such records as means of instruction, not only in the science which detects crime and saves them from harm, but also in the moral aspects of the life, such science tends to conserve.

We shall commence these studies in the romance of science and crime by a study in what may be called "identification." Of all processes in which the public may be called upon to take part, the work of identification is one of the most difficult and tantalising. Occasionally, the identification of the living is a task of extreme difficulty, and still more so is the identification of the dead. The nature of personal identity seems at first sight to be a matter of absolute certitude. But when we are called upon

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to identify even a person whom we have known intimately under circumstances of doubt, and when disguises, disfigurement, or death have operated to change the appearance of the subject, the task of definitely pronouncing upon the question of identity may prove to be of extreme difficulty. A well-known French case will illustrate our meaning here. A man named Benoit was believed to have perpetrated a murder in Paris. He was seen in Paris at 2 p.m. of the day on which the murder was committed, by several persons, and then possessed hair of a black hue. At Versailles on the evening of the same day at five or six o'clock, he was alleged to have been seen, but on the latter occasion he was described as possessing fair hair. Laying aside the supposition that Benoit wore a wig,—there was no contention that a wig was used—the important matter of his identity turned upon the question whether black hair could be dyed fair within the limits of time above-mentioned? and such a question was accordingly propounded to M. Orfila, the famous French expert. A Parisian hairdresser of wide experience alleged that the feat was impossible, but Orfila showed that it had been effected twenty-six years previously by Vauquelin, by aid of the bleaching agent, chlorine gas. One part of strong liquid chlorine, mixed with four parts of water, will alter black hair to a dark chestnut hue in two hours, while further applications of this agent render the hair light chestnut, and yellow, or even white. In such cases it has been maintained, however, that the full effect of bleaching the hair cannot be obtained until twelve or even twenty hours have elapsed.

The following remarks and incidents serve to show how puzzling this question of identification may become :—

Allusion has just been made to the difficulty experienced in the work of identification, even by the most intimate relations and friends of the missing person. Many examples of this difficulty may be cited, the indefinite nature of the task arising probably as much from the alteration in appearance produced by the "chilly hand" which sets the features in repose, as from any other cause. The lapse of a few hours after death may effect grave change in the cast or *pose* of the human face, as every doctor knows; and police authorities who have to do with the identification of the dead as well as of the living, are accustomed to receive with justifiable care and caution the statements made by most persons in cases of disputed identity.

A comparatively short time ago, an instance of this fact was afforded in a northern city. The body of a woman of dissolute habits was found under circumstances which rendered the theory of her having been murdered an extremely probable hypothesis. The question naturally arose as to the name and identity of the victim. Several persons were found ready to declare that the body in question was no other than that of M. N., with whom they had daily associated. Interrogated closely upon this point, they still adhered to the exact statement they had made, and their opinion was supported by at least one fact—namely, that M. N. had not been seen in her usual haunts for some days prior to the discovery of the body. Identification in this case seemed to be little short of a certainty, when it occurred to a shrewd police-officer to make assurance doubly sure by visiting the city prison, with the view of ascertaining whether the person in question might not be incarcerated within its walls. His search was duly rewarded by the discovery that M. N. was there undergoing a short term of imprisonment, ignorant of the circumstances under which, like some notabilities of our day, she was credited with being "with the majority" whilst still alive and well. A suggestion gravely made in connection with this case, that the body was that of a certain person A. B., was indignantly refuted by A. B. herself walking into the police-station and confronting her anxious friends.

In the Vice-Chancellor's Court so recently as 1866 a suit was tried, in which the plaintiffs, Holliss, wished to establish the death of a person named William Turner. Turner was last seen alive on the 7th of May, 1865, at Guildford. He then presented an emaciated appearance, his mind was weak, and he was unshaven and suffering from boils and sores, which were dressed at the last-named place. Now, on the 17th of May a body was found in the River Wey. At the inquest, which was summoned on the 17th, two men named Etherington swore to the corpse as being that of their father, who was missing at the period in question. The persons who saw and spoke to Turner at Guildford, on the other hand, declared their belief that the body was his; but it was nevertheless buried as that of Philip Etherington. On the neck of the drowned man a coloured neckerchief was found. Some months afterwards, Philip Etherington, the supposed drowned subject, walked into his daughter's house. The question "who was the drowned man?" was then revived. The proofs were clearly brought out at last. William Turner had left behind him at Guildford a fragment of a handkerchief. This fragment being found to correspond exactly with the article removed from the neck of the drowned body, and the fact that the wounds of William Turner had been dressed at Guildford, recalled to mind the fact that traces of such disease were discernible on the drowned man. To the Vice-Chancellor's mind the chain of evidence was complete and satisfactory, and judgment was accordingly given establishing the identity of William Turner and the drowned man. Yet, the two sons of Philip Etherington were positive as to the identity of the body with their father. That person must, of course, have remained utterly ignorant, during his absence from home, concerning the quandary into which that absence had led his friends and others.

A curious case was tried at the Warwick Assizes in 1805, where a suit was entered by the relatives of a drowned man to annul a commission of bankruptcy on the ground that, being already drowned when the commission was issued, it was void in law, and the creditors would therefore have no power to seize the property of the deceased. The man was last seen alive on November 3; legal proceedings in bankruptcy were taken out a few days after this date, and on December 12 his body was discovered in a river. Five weeks and four days had therefore elapsed between his departure from home and the discovery of the body. No doubt was cast upon the identification in this case, and the question before the court turned upon the date of death by drowning. How could the date be fixed? Nature in this case afforded a means of at least approximating to the date in question.

As part of the chemical changes which the human body undergoes in the course of its decomposition in water or in damp soil, a peculiar substance called *adipocere* is formed. This substance is, in fact, a kind of soap, ascertained to result from the union of the fatty acids of the body with the ammonia also derived therefrom; and when thus converted into adipocere the body may retain its condition for lengthened periods of time. The Warwickshire case of the drowned bankrupt exhibited in part the chemical changes resulting in the production of adipocere, and the natural question, "How long does this substance take to form?" came to be raised. Medical evidence adduced at the trial showed that a period of about six weeks was, at the very least, necessary for the production of adipocere, whilst a very much longer period was required, as a rule. This evidence tended naturally to cause the jury to extend as far as possible, and as far as was consistent with facts, the time the body had lain in the water. This opinion led to a verdict for the plaintiff, which, of course, was founded on the belief that the person must have been dead during the whole, or nearly the whole, six weeks.

But more remarkable cases showing the puzzling circumstances which surround identification await our further perusal and consideration.

COTTAGE HOSPITALS.

THEIR FURNISHING (*Concluded*).

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

FIFTH PAPER.

The nurse's room should be furnished with every care, remembering that upon her health will depend in a great measure the welfare of the patients. Especially would we urge the provision of an extra-comfortable couch and the easiest of easy chairs, so that in leisure moments she may snatch a little rest at odd times. It will be well also to provide a warm dressing-gown and slippers for night use, as she will often be called out at such times.

The wards should have no carpet save a narrow strip at each bedside to prevent chilling of the patients' feet as they step out of bed. Lockers should be put up in the wards for the reception of the clothes and other articles belonging to the inmates, and the most convenient position for these will be found to be the window-recesses below the level of the sash. The tops of these lockers form very convenient tables for medicine bottles, &c.

The beds are doubtless the most important pieces of furniture in the wards. The bedsteads must be of iron. We feel it a duty to state that of all hospital bedsteads which we have seen we greatly prefer those made by Mr. Thomas Allen, of Bristol. A sketch (Fig. 1) is annexed of

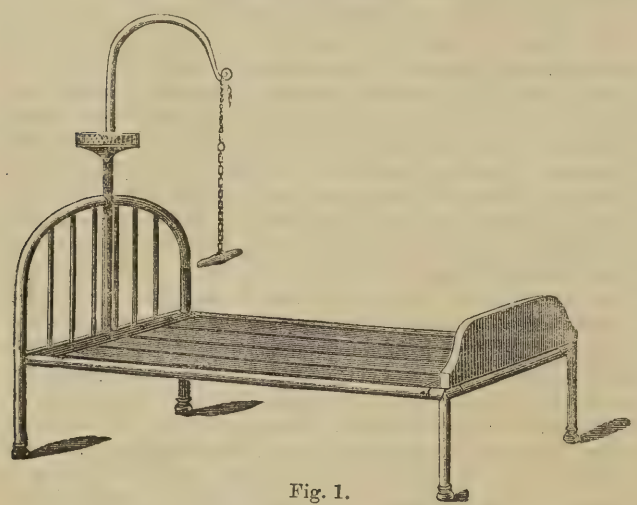

Fig. 1.

such a bedstead. The bottom is formed of pitch-pine laths, which confer a high degree of flexibility upon it, and a certain amount of disinfecting power. The foot-board is of polished timber. At the head of the bed is an iron upright which curves forward and supports a chain, to which is fixed a polished wooden bar as an aid to weakly patients in moving in bed.

Mr. Allen has brought out a portable bed-table for invalids, one of which we would earnestly recommend for use in each ward. We give a drawing of it (Fig. 2). It is an ingenious article, and can easily be fitted to the bedstead.

The ward should likewise have a bed-rest for any patient who requires it. Mr. Allen's is, we think, the best form, and its design can be seen in the accompanying illustration (Fig. 3).

Each ward should have at least one easy chair, with a low, broad seat and sloping back. A screen is absolutely necessary for each of the wards, not only for certain cases of disease, but to ensure a degree of privacy for any of the patients who may be hopelessly ill.

If the wards have not the closets which we recommended attached to them, it will be necessary to have a dry-earth commode in each; for there will be many patients who could go as far as the attached closet, but could not reach one in a distant part of the hospital. And, lastly, the ward should have a charcoal filter.

The special or private ward should be provided with the same articles of furniture as the other wards, only differing in regard to its being a single-bedded room.

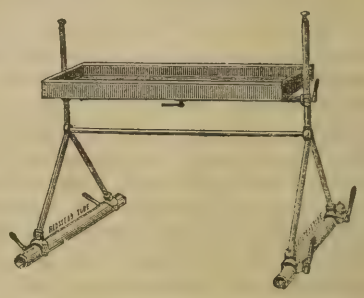

Fig. 2.

The principal feature of the operating room will be the table for surgical operations. It should be simple in design, not such an elaborate effort of mechanical ingenuity as some of those we see, which recall memories of the "combined table and steps," described in the comic pages of "Out of the Hurly-Burly." There must be a baize-lined cupboard or case for keeping the various instruments, and in the operating-room may be kept the steaming apparatus, hot bottles, and similar articles, along with the nurse's dressing-tray. This last-mentioned and most useful thing should be provided with compartments to hold Macintosh and gutta-percha sheeting, lint, strapping, bandages, sponges, silk, and simple instruments. Lastly, in the operating-room the medicine-chest may find a place, as there will be ample room for all the preparation of medicines required by six or seven patients without a separate surgery.

Of the various appointments of the kitchen, laundry, and store-rooms, we need not speak, except to make one

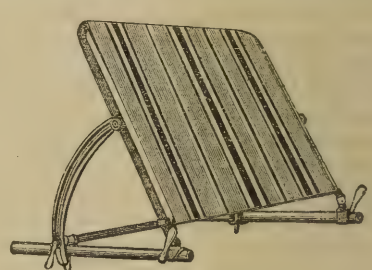

Fig. 3.

single remark about the kitchen. In the winter season especially, the convalescent patient may prefer to sit in it rather than in the day-room, and therefore it must be a bright and cheerful room. Some article of furniture resembling the old-fashioned English settle might be provided, so that in the evening the patients might rest on it before the fire, to which it might be drawn forward.

The mortuary demands a few words. Its walls and ceiling should be covered with enamelled tiles, carefully cemented together, and the floor should also be of some highly-polished material. In addition to the slate table for the performance of any *post-mortem* examinations which may be allowed, there ought to be a slate shelf at one end of

the apartment, where the dead may rest until the relations bear them away.

In the case of a coroner's inquest, the jury may be accommodated in the day-room, where also meetings of the hospital committees can be held.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

SEVENTH PAPER.

The *prognosis* or prospect of the case will depend upon the condition of the patient, the gravity of his symptoms, and the presence or non-existence of complications. From the time of Hippocrates, it has been well known that fat people's lives are uncertain, and that they do not, as a rule, bear injuries or operations nearly so well as thin ones. Should an acute inflammation or a fever attack these people, the chances of recovery are poor, and, when recovering, their convalescence is usually prolonged; but if during their illness the fat disappears moderately quickly, and the action of the heart and other organs is good, the prospects are very favourable.

A few words as to the mental powers of fat people. Dickens, as is well known, portrays them as dull, sleepy, phlegmatic, cold, unlovable, greedy, and with sluggish wits; but this is, in my experience, not the rule, as the majority of fat folk with whom I have had to deal have been of a bright, jovial disposition, and of keen wits. History tells of Epaminondas, the general, who was enormously fat, and who was somewhat unfortunate in his married life, having as his sole offspring his two celebrated victories.

Another well-known historical personage, William the Conquerer, was enormously fat, and died from erysipelas caused by a wound resulting from a fall from his horse. He, certainly, had no lack of military ability. Many other instances of fat and clever people might be adduced, but it will suffice to mention a few distinguished literary and historical names to disprove the popular error as to the stupidity of obese individuals. Dr. Johnson, the great *littérateur* and lexicographer, Balzac, the distinguished French novelist and essayist, Louis XVIII. of France, and several eminent German scientific men may serve as illustrations, and there is at present an English physician weighing over twenty stone, who is second to none in his great mental capacity, versatility, and brilliant power of writing and speaking. The notorious Claimant, who was very fat, was certainly anything but a fool.

We now arrive at the question of *treatment*. Having shown that too much food and drink, as well as their indiscriminate selection, and the lack of a proper mode of life, are the chief factors in the production of obesity, and having pointed out its prominent symptoms and dangers, I will first explain what I mean by the expression *taking too much food*, then proceed to make plain the objections to previous methods of treatment, and subsequently explain my own.

Excess of food taken, or exaggerated alimentation, means that the quantity of eatables and drinkables introduced into the organism exceeds the quantity necessary to repair losses, and this increase of ingested materials may extend to all the alimentary substances or to only one of them. There is more than one process affected in exaggerated feeding:—1. The elimination (or getting rid of waste products) may increase proportionately to the quantity of food eaten, and, as normally, there is equilibrium between what is taken in and what passes away, the body neither gains nor loses, and such a condition occurs when an excess of food is compensated by an increase of exercise. 2. Elimination does not keep pace with the increased food taken. A portion of the alimentary principles is retained in the organism in excess of what is needed for repair, and the body increases in weight; and (3), the excess of food may upset the digestive and absorptive powers, and in such a case the surplus food would be found in the excretions unmodified by digestion. In each individual there is a maximum limit of digestive and absorptive power which cannot be exceeded without producing corresponding troubles of the general health, and the maximum limit varies for each kind of the simple foods. It is easily attained for the fats and albuminoids, less so for the minerals and for water.

There have been many plans for the reduction of excessive fatness, the more prominent of which have been known under various names, such as the hunger cure, milk cure, medical cure, &c. They may all, however, be divided into three classes:—1, dietetic; 2, medicinal; and 3, drink-water or bath cures. The object of the medicinal plans was to diminish the quantity of fat by the administration of absorbents, diuretics, purgatives, or of certain reputed specifics; and, in consequence of the ill-effects too often following these modes of treatment, they have justly fallen into disrepute, not only only on account of their danger, but because they were not, and could not be, permanent. I may state that I have often been asked about a certain much-advertised modern patent medicine as a cure for fatness, but that I have no experience of it, and certainly should not resort to its use, as physiology teaches that a merely medical plan cannot be permanent, and if long continued must surely be harmful; and though, on the other hand, if the patent medicine in question be merely a catch-penny, it may be incapable of doing either harm or good, and its purchase will then only end in disappointment, and in the emptying of the pocket of the credulous purchaser. It is noteworthy that these secret remedies are always accompanied with directions as to diet, exercise, &c., and the ignorant sufferer in strictly carrying out these directions, and perhaps deriving benefit therefrom gives the credit of it to the medicine, and not—as should be done—to the regimen. I do not so much wonder at people running after patent medicines for this malady, seeing how much its treatment has been neglected by the profession; but I very much marvel when so-called educated people run after cancer-quacks, bone-setters, herbalists, &c., seeing that there are so many able medical men ready at their disposal. There are medicines which are of undoubted service in the general and special treatment of corpulence, but as these are mostly powerful drugs, and as no one should undergo any thorough course of treatment without being previously carefully examined, it would be worse than folly to enumerate drugs which even an experienced medical man would administer with caution.

(*To be continued.*)

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HOW TO CLOTHE CHILDREN.

By Ada S. Ballin.

PART II.

The flannel vest should then have over it another made in the same way, but with sleeves to the wrist, and more than one of these can be put on if it is very cold; all should fit carefully round the throat. I have seen very nice vests for infants knitted of fine wool; these have the advantage of stretching with every movement, while they are warmer than flannel, since they cling closely to the figure. They may be made in the way described, and used either as vests or as wraps under the robes. If the child is thoroughly warmly dressed underneath, the mother may use a robe of any material she likes; but I strongly deprecate the habit of dressing a child in thin clothes in cold weather, and then wrapping it up in a shawl, which cramps its movements, or keeping it near the fire, which makes it very liable to take cold directly it is in a cooler atmosphere.

Infants should not be kept at home because it is cold, but should have on warm outdoor things. A very pretty and cheap outdoor garment for a child of any age up till five or six may be made of white rabbit-skins. For infants this should reach two or three inches below the robe; for short-coated children it should reach the bottom of the dress, that is to say, to the ankles. Both this and the summer cloak should have sleeves so as not to impede the movements of the arms, as capes do, and should fasten down to the bottom. Capes are very undesirable, since (1) their weight hangs from the neck and shoulders, being unevenly distributed; (2) they open and leave the chest exposed; or (3) allow the cold air to get up underneath them and attack the armpits and chest. Hoods should always be worn, as very young children suffer much from earache, especially baby-boys, whom "*pestilent custom*" condemns to have to wear unprotecting, stiff, and uncomfortable hats. They may be made to match the jacket, or either knitted or crocheted in white wool, in either case lined with white sarsenet, as coloured materials should not come in contact with the skin, for reasons which I am going to explain later on.

While I am on the subject of out-door garments, I should like to say a few words as to the mode of out-door exercise for children who cannot yet walk. I am sorry to disagree with Dr. T. Goodall Nasmyth (see Health, No. 21, p. 329), inasmuch as I think it better for children to be wheeled about in a perambulator than carried in the nurse's arms. If they are properly dressed, I do not think there need be any fear of their thus being more liable to take cold. If the child is carried, it is usually cramped by the nurse's arms and frequently held in unnatural positions, as with its head hanging over the arm, so that a spectator fears the neck may be dislocated, or with its feet turned inwards, &c. The nurse, finding the child heavy and that she gets tired, curtails its outings, and instead of spending several hours in the air, as it ought, the time dwindles down. Then, again, if the child is carried, it may inhale the exhalations of the nurse's body, which are not always of the sweetest, and of her clothes, which are not always of the cleanest. But when I recommend perambulators, I do not mean the old-fashioned and, unfortunately, still very prevalent kind, with a seat, and a strap across to keep the baby in; where the head most often hangs over the side of the machine, or the body tends to collapse in a heap on the floor of it. I mean one of the light four-wheeled machines now coming into use, where the infant can recline at full length, or the older child can sit up without restraint; which has no seats, but a sort of mattress at the bottom, on which the child can either lie or sit; which runs with but little vibration on indiarubber-cased wheels, and is sheltered from wind and rain by a hood. For wintry weather a fur rug may be placed in these, effectively protecting the infant from the cold.

A word now about bed-clothes, which should be light, and never tucked in so tightly as to hamper the child's movements. For cold weather a down quilt is very nice, and the child should wear a little woollen spencer, so that in moving it can uncover the upper part of its body without risk of chill; these may be bought in all sizes from Mr. Addley Bourne, at prices ranging from 2s. 6d., and the mother can easily crochet or knit them if she has a pattern.*

I wish to insist here that infants, or even older children, should never be allowed to sleep in the bed with grown people, as they thus are liable to breathe contaminated air. Further, infants are thus exposed to the great danger of being "overlain."

At an inquest held in St. Pancras, on the 12th inst., upon the bodies of two children who were found suffocated in bed with their parents, the coroner, Dr. Danford Thomas, stated that he held every year between 120 and 150 inquests upon children who had met their deaths in this way. In Birmingham the Borough Coroner held four inquests on the 18th inst. on infants who had been overlain in bed, and he remarked that, in order to avoid such large sacrifice of infant life, cots for children should be provided, as enforced by law on the Continent. The line between the accidental and intentional disposal of infants is allowed to be very indistinct. These facts I quote from the *Lancet* for October 27. Mothers, when they take their children into bed in order to suckle them, should replace them in their cots directly they have been fed.

(*To be concluded.*)

INDIARUBBER OR CAOUTCHOUC.

In consequence of the great demand, of late years, for Indiarubber or caoutchouc, a considerable amount of attention has been given to discover or develop new sources of this useful article, some of which promise to be productive of valuable results. The time is not so very long since when indiarubber of commerce was obtained only from one plant, and that plant the *Siphonia elastica*, as it was then called, but which is now known as the *Hevea brasiliensis*, and which yields what is known in trade, at the present time, as Para-rubber, a quality which holds its own for superiority over all others of the numerous sources from whence the elastic gum is obtained. In consideration of the great and increasing value of indiarubber, it may not be out of place to sketch the history of the substance from its introduction into this country, at the latter end of the last century. In the preface of a work treating on the art of perspective, published about 1770, we find the author thus speaking of that which is now an accessory to every ink-stand:—"I have seen a substance excellently adapted to the purpose of wiping from paper the marks of a black lead-pencil. It must, therefore, be of singular use to those who practise drawing." The writer then goes on to state where it could be procured at that time, which was apparently at only one place in London, and the price was three shillings for a "cubical piece of about half-an-inch,"

* For particulars as to cradles and cribs see Mr. Nasmyth's article, No. 21, p. 329.

which, he adds, will last for several years. The form in which Para-rubber was formerly brought to this country was alone sufficient to arouse a curiosity as to its origin.

Caoutchouc made its first appearance among us in the well-known grotesque figures of birds and animals, which were not by any means true to nature. No information, however, could be elicited, for several years, as to its origin, other than that it was a vegetable product. The first accurate information was obtained by a French geographical expedition, which, not confining its attention merely to the purposes for which it was organised, cleared up many other difficult points connected with natural history. These observers reported the discovery of great numbers of trees known to the natives as the "heve," which yielded a large quantity of an elastic, gummy substance, identical with the caoutchouc which had been imported into Europe some years previously. The indiarubber of commerce is now, however, as we have before said, furnished by many plants totally distinct from each other, and though a great deal has been done, of late, to clear up the nomenclature of many of them, there are others still that are but imperfectly understood. The Para-rubber, which has been imported in such large quantities that the supply has been getting scarce for some years past, is furnished by *Hevea brasiliensis*, though several other allied species, such as *H. spruceana*, yield rubber more or less abundantly. Wallace tells us that the principal caoutchouc district lies between Para and the Xingui river, the trees being among the largest denizens of the neighbouring forests. They average about 100 ft. in height, and 2 ft. or 3 ft. in diameter. The tree bears a fruit about the size of a large walnut, divided into three one-seeded lobes, which separate or split annually when ripe. The seeds are mottled and shining on the outside, and are similar in shape and appearance to those of the castor oil, but much larger. They are said to be poisonous when raw, but quite harmless when boiled. The macaws, however, devour them greedily in their raw state without experiencing any harm. The tapping of the trees and the collection of the caoutchouc have been so often described that it is needless to enter upon it here. In tapping, however, it may be remarked that the first wounds are always made at the uppermost part of the trunk, by which means the juice is drawn off down to the point of incision, after which another wound is made lower down, and exhausted; and so on until the base is reached. Perhaps the next most important of American sources of rubber is *Castilloa elastica*, a plant closely allied to the bread-fruit tree, and known as the Central American or Guatemala rubber-tree; then comes the Pernambuco rubber, from an apocynacious tree (*Hancornia speciosa*), an order which, besides producing Borneo rubber, has recently revealed many rubber-yielding plants, not only in the East, but also in Africa, both on the East and West coasts.

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

CONCERNING CLOSETS (*concluded*).

By H. T. Munday, C.E.

When the valve closet was invented a great improvement was effected, but even in its construction the necessity for attention to detail is well exemplified. It consists simply of an earthenware pan, holding the water, which is retained by a brass disc about 3½ inches in diameter, kept in position by the weighted lever attached to the handle. Directly the handle is lifted, the disc or valve opens back into a small recess, which can be readily cleaned, and therefore offers no receptacle where deposit can collect. The contents of the basin pass away directly down the soil-pipe, and if this latter is properly disconnected from the drains at its foot, no other trap is required. Some sanitary engineers, however, prefer to fix another one immediately below the valve, and the ordinary plumber, if consulted, naturally recommends the D type. Of course, this should never be used. The solid 4-inch S-trap is the best to put in, as this is self-cleansing under a proper flush. The basin should be regulated to stand about half full, as this gives a good volume of water to force the trap directly the handle is lifted. The old-fashioned spreader should be discarded, and a flushing-rim all round the basin be provided. This secures a thorough washing all round the pan, every time the flush is put on. When an overflow is provided, it is better to make it discharge directly on to a leaden safe, in which the apparatus stands, and the outlet from the safe must, of course, go into the open air, so as to be always visible. Plumbers, if left alone, will often make this outlet pipe discharge into the soil pipe *below* the trap, and thus bring up foul air under the seat. If the overflow *is* connected with the soil-pipe, it must be trapped and fed by a weeping-pipe coming off the flush, so that the trapping-water is renewed every time the closet is used. Moreover, the valve at the bottom of the basin must be fixed in such a manner that when pulled back it may shut against the mouth of the overflow and so prevent deposit from choking it. The valve closet is expensive, and there is often great difficulty experienced in keeping the valve tight; when this is not the case, the basin is perpetually running dry from leakage. Hence, except on the ground of appearance, there is no particular advantage in its use as against the best kinds of hoppers. The same remark applies to the so-called "wash-out" closets, such as Bostel's "Excelsior," Dodd's, &c. The whole of these are made in earthenware, and the trap, instead of being in the centre of the basin and exposed to the full rush of water, is placed at the side and out of sight. A small quantity of water is retained in a shallow pan to receive the soil, and the flush drives it over into the trap. Hence, the force of the water is so broken that there is always danger that the trap will not properly clear itself, and it is certain it will not do so unless fully three gallons, conveyed by 1½ in. flushing-pipe, is used every time.

There is, however, little doubt that the "hopper" closet as now improved is the best that can be used in any house. It possesses the great merit of cheapness combined with simplicity, but in order to insure perfect and entire removal of the soil from the trap, a large and sudden volume of water is requisite, and this can only be obtained by providing an arm on the pan large enough to take a 1½ in. or 1¼ in. flushing-pipe. The lower the height of the fall of the water the larger should be the flushing-pipe.

In addition to this, it is highly desirable that the flush should be automatic and of a definite quantity sufficient to clear the trap at each discharge. In other words, when the user of the closet pulls the handle, nothing that he can do should be able to prevent a certain volume of water being discharged into the pan. Under the old system, as soon as the handle was dropped the flush ceased, whether sufficient water had fallen to flush the trap or not. There are several patents in the market professing to fulfil these conditions, and one of the best of these is shown in the

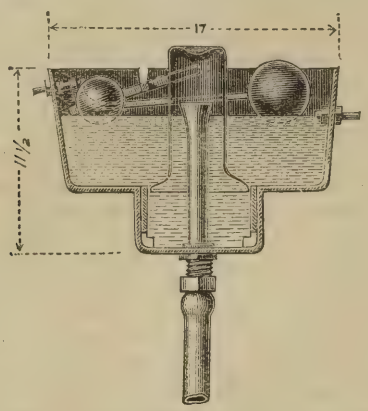

Fig. 1.—Bean's "Waste Preventer."

annexed sectional sketch (Fig. 1). It is known as Bean's "Patent Direct-Acting Valveless Waste Preventer."

A good hopper closet is also shown (Fig. 2), and the two are sold together by the maker, Mr. O. D. Ward, 182, Upper Thames-street. No man can want a more perfect arrangement, and it is used in some of the best houses in the country. In the hopper closet the soil, &c., falls directly into the trap, and is immediately ejected by the full force of the flushing water. The manner in which the paper is

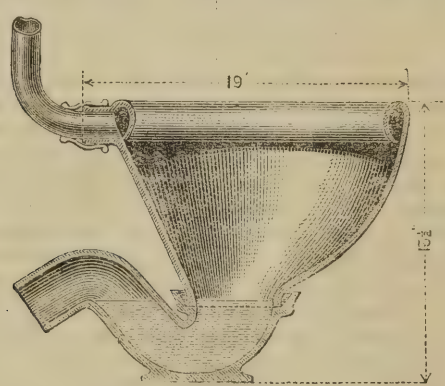

Fig. 2.—"Hopper" Closet.

cleared away is always a good guide as to whether the flush is efficient or otherwise. If it lies in the trap, it is obvious something is wrong either with the flush or the form of the basin and trap. The principle on which the cistern shown in the sketch operates is as follows:—As soon as the handle is pulled, the dome shown over the trumpet-shaped flushing pipe descends and displaces a quantity of water which rushes over the trumpet mouth, driving out the air in the pipe. A siphon-action being immediately set up, the whole contents of the cistern (2¼ gallons) are instantly discharged with great violence into the trap, which is thus thoroughly cleared, and the basin washed out through the medium of the flushing rim. The cost of the closet and waste preventer together is only about £3.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

Courtesies of Railway Travelling.—Mr. J. Pridgin Teale, of Leeds, has written to one of the local newspapers to complain that he recently took cold in consequence of a carriage window being left open by a passenger quitting the train while he was asleep. Our sympathies are, of course, with Mr. Pridgin Teale, but that gentleman's experience was not wholly untoward. The cold he unwittingly caught was, no doubt, quite thoughtlessly inflicted upon him by his fellow-traveller, who must be deeply distressed, if he reads the *Leeds Mercury*, to learn that the consequence of his neglect has proved so serious to a member of that profession which, according to the popular view of things, ought to be proof against the ills it is commissioned to cure. If Mr. Pridgin Teale's letter should induce railway passengers to be more considerate for the comfort of their fellow-travellers, it will do good. In the old coaching days, however, travellers were wont to be even less courteous than they are now. Then it was a favour of very high degree to have a window up or down to suit the convenience of any passenger except the one sitting with his face to the horses and close to the window in question. If one of the other travellers did not wish to be suffocated, he found it necessary to push his elbow "accidentally" through the glass, or in some way to hamper the sash. If, on the other hand, he was fearful of cold, unless he could jerk the sash out of its groove, so that it could not be put down, there was little chance of his being accommodated. Railway travellers are either better mannered, or, in some way, more amenable to reason than the "insides" of the old coaches.—*Lancet.*

* * *

The Propagation of Diphtheria by Fowls.—It has been known for some time that pheasants, pigeons, turkeys, domestic fowl, and the like, were liable to be attacked by diphtheritis. The *Wiener Allgemeine Medicinische Zeitung* informs us that Professor Gerhardt, of Würzburg, has carried out a series of observations for the purpose of determining whether the disease may be communicated by this means, and has come to an affirmative conclusion. In September, 1881, 2,600 fowls were sent from the neighbourhood of Verona to Nesselhausen, in Baden, where there is a great fowl-rearing establishment. Some of them must have been affected with diphtheritis before they started, and in the end 1,400 fowls died of it. In the summer

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

of last year 1,000 chickens were hatched from eggs collected from many different places. Six weeks after their birth diphtheritis manifested itself among the young chickens, and so badly that in a short time they all died. Five cats that were kept in the establishment also became ill of the same malady, and died. A parrot that hung in a cage in the house was also attacked, but recovered. Last November an Italian hen, while being "painted" about the jaws with carbolic acid by the chief keeper, bit the man's wrist and foot. Presently he became ill with a smart fever, considerable swelling at the wounded parts, and all the symptoms of traumatic diphtheritis. His recovery was very tedious. This was not the only case of the transmission of the disease to men. Two-thirds of all the labouring persons employed about the establishment became ill with ordinary diphtheritis, and one man conveyed the infection to his three children. It is worth noting that during all this time no other diphtheritic cases occurred at Nesselhausen or in the neighbourhood. The inference seems obvious that all these cases originated with the sick fowls.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

THE EDUCATION OF GIRLS.

Female Education from a Medical Point of View. By T. S. Clouston, M.D. (Edinburgh: Macniven & Wallace.)

This pamphlet contains two lectures delivered by Dr. Clouston, Physician-Superintendent of the Royal Edinburgh Asylum for the Insane, before the members of the Philosophical Institution of Edinburgh. The lectures attracted a large share of attention at the time of their delivery, and their publication in the present cheap and handy form must be regarded as a boon not to educationists alone, but to parents and to all who are in any way interested or concerned in the care and upbringing of girls. The pamphlet was never more opportune than at the present time, when the world is "examination mad," and when true culture and education, and the training of the mind to form an effective instrument of thought is apt to be lost sight of in the ceaseless competition of school with school, and class with class.

Beginning his task by a wide and systematic survey of the medical aspects of education, Dr. Clouston deals with the all-important question of heredity and inheritance as applied to the mental development of individuals. The varied characters of the different epochs of life are lucidly sketched, and the period of adolescence or youth, in its physiological and mental features, is duly dwelt upon as forming the foundation of the arguments which the lecturer afterwards proceeds to build up from the physician's point of view. He has a most interesting passage on the brain-work, and its relations to body and to life-processes at large, which is too interesting to be passed over :—

> The brain is a most complicated organ in structure and function, that regulates the working of every portion of the body, that has certain portions of it devoted to motion and feeling, and passion, and digestion, and body-growth, and nutrition, &c. It is the one organ that dominates all the others, regulating and harmonising all their functions. If one side of it is injured during growth, the opposite side of the body is left stunted and partially paralysed, as well as the mental power weakened. If undue calls are made on one part, the other portions suffer. Now this wondrous, and as yet only partially known, organ has grown most of its growth, in so far as mere bulk is concerned, by the time adolescence begins. But its higher qualities—its force, its power of producing varied energies—are then only nascent. They develop during this period. It is then that the brain needs plenty of rest in sleep, fresh air, pure blood, good nourishing non-stimulating food, and work that develops but does not exhaust. The mental portion of the brain is, no doubt, the highest, and undue calls on that portion exhaust more than any other part. As I said, only a certain amount of energy or work is possible by any amount of stimulation. The brain has most diversified functions, but it has also a solidarity of action. No part is sick without all the other parts suffering. No function is overtaxed without all the other functions being weakened. Overtaxing of the mental function is specially weakening. In mature life, after the body is fully developed, such an overtaxing can be repaired by rest. The injury is merely temporary. If a man overworks his brain in business or study, and gives himself too little sleep, and gets an attack of indigestion, it means that he has taken up the brain energy that ought to have gone towards digestion in mental work. But he stops work, goes to the country, and his recuperated brain soon acquires force enough to stimulate the stomach to secrete its juices and do its work. But if in adolescence, before the bones are knit, and the growth completed, and the feminine nature far advanced towards perfection, if the brain that is in the process of doing all these things is year by year called on to exert its yet imperfect forces chiefly in acquiring book knowledge by long hours of study, and in consequence the growth is stopped, the blood is thinned, the cheeks are pallid, the fat destroyed, the wondrous forces and faculties that I have spoken of are arrested before they attain completion, then, when the period of growth and development ceases, the damage is irreparable. There is no time or place of organic repentance provided by nature for the sins of the schoolmaster. Life has to be faced with an imperfect organism, its work and duties done with impaired forces, and its chances of accidents met without a stock of reserve power. This is a poor look-out for the individual; but when motherhood comes, and sound minds in sound bodies have to be transmitted to posterity, how is it to be then with the future race? This aspect of the question of female education during the period of adolescence is of absolute primary importance to the world. Yet it is wholly ignored in many systems of education. What is the use of culture, if it is all to end with the present generation? What a responsibility to transmit to future generations weak bodies and over-sensitive brains, liable to all sorts of nervous disease! Nothing can be more certain than that the qualities, good and bad, acquired in one generation, are sent on to the next. The world may be all the better of a generation of healthy, ignorant, and happy mothers, who can produce stalwart, forceful sons and daughters (not that I wish this lecture to be an apology for health and ignorance), but the world must be worse for a system of stopping full and harmonious development in the mothers of the next generation. My plea is, that, as nature is harmonious in mental and bodily development, we should follow on her lines, and not set up an educational standard for ourselves that is one-sided, because it takes no proper account of the constitution of the body and brain at all, only considering one brain function—the mental.

There is also a passage of some moment to Dr. Clouston's argument which may also be quoted. Speaking of the duty of "keeping the mental machine a little back," the author says :—

> It will be said, as a hereditary fact, that most great men have had mothers of strong minds. I believe this to be true, but it is not a fact that many great men have had what would now be called "highly-educated" mothers. On the contrary, very few such men have had such mothers. There were usually an innate force and a good development of mind and body in the mothers of such men, who usually had led quiet, uneventful, unexciting lives. I am inclined to believe that, if the mothers of such men had been in adolescence worked in learning book knowledge for eight or ten hours a day in a sitting posture; if they had been stimulated by competition all that time, and had ended at twenty-one by being first prizewomen (as probably most of them had the power of being); if this had befallen them, then, I think, their sons would have been small and distorted men, instead of being the lights of the world.

The great argument for the "higher education" of women is that it "makes them better companions for educated men." But Dr. Clouston, who sets himself in battle array against the strain which higher education involves for the vast majority of women, says, we should look at this view

of matters in the light of the ideal women who appear in literature. He maintains that the best creations of the feminine type in literature do not correspond to the product of the "higher education" of to-day. George Eliot's women—Dorothea in "Middlemarch," Gwendolen Harleth in "Daniel Deronda," are pointed out as examples of typical young women, who, with all their faults, were true to nature. Even Romola, who was a learned woman, "took to love-making, marriage, self-denial, charity, and religion, and deserted her books the moment her duty in them was done." But we are afraid Dr. Clouston's opponents will be ready to allege that there is no reason why the highly-educated woman of to-day should not "go and do likewise." Be this as it may, our author's fear is that the over-education of women during the period of youth has a tendency to interfere with perfect health, and that, in this light, the purchase of culture at the expense of health should not for a moment be tolerated by any true educator. As it is, the physician roundly condemns all such forcing of brain at the expense of body.

Dr. Clouston's account of school-girls' work is it itself an important item :—

As the result of my inquiries among pupils and teachers in the advanced schools for young ladies, I find that about five or six hours of actual school work, and from two to four hours of preparation at home, may be taken as the time that is each day occupied in education. Many of the ambitious, clever girls, in order to take high places and prizes, work far longer than the time I have mentioned in preparing at home, especially if the musical practising is taken into account. At certain times of the year, before examinations, some of these girls will work twelve and fourteen hours a day, and take no exercise to speak of, and but little fresh air. For those who attend the day-schools a somewhat solemn walk to and from school is the chief means the body has of keeping healthy at all. To satisfy the requirements of the brain, and the blood, and the muscles, and the digestion, and the nutrition, and the general growth, we have a girl getting up at seven o'clock in the dark winter morning, dressing, eating a hasty breakfast (as if that was a secondary matter that was too unimportant to waste much time over), having a revise of some special subject learnt the night before, walking to school in perhaps thin-soled boots, and doing the most physiologically profitable thing of the day in the chat and gossip on the way. School and lessons from nine o'clock till two or three, or four often, in questionably-aired, overheated, and dull class-rooms, with not a bright bit of paint or colour in them to counteract the sunless gloom of our Scotch winter weather. Who ever saw a class-room in a school where taste had been exercised in the decoration and painting? In my opinion our school-rooms should be made at least as nice as our drawing-rooms. Then the walk home, a hurried dinner, a little rest, and to work till nine or ten o'clock at night in gaslight. That is the sort of life, and these are the conditions, under which we expect not only prodigies of learning in all the sciences, but sweet tempers and sweetly healthful bodies to be developed. That is the actual treatment to which thousands of our girls are subjected during the most momentous period of their lives, physiologically; when the growth of the body is being completed, its symmetry and perfection are being reached, when the latent energies for a life's work are being or should be accumulating, and when a certain amount of joy and fun and play are nature's best aids to health of body and mind.

There is another class of young women (he continues) who have even a harder lot in many cases, and these are the pupil-teachers in the Board Schools. Their work is, in some cases, simply continuous all day, and part of it is irksome, uninteresting drudgery; their homes are often far from being cheerful, and their food far from being very abundant. I know as a fact that the lives of some of our female pupil-teachers are such that as melancholy a "Song of the School" could be sung of them as Hood's "Song of the Shirt."

The description of the ideal school is also worth quoting :—

If I had a school to construct on ideal principles, I should have it placed on the north side of a large space of ground. I should have it one story only, and every class-room lofty, and with roof-lights to let in as much as possible of our scanty Scotch sunlight. I should have the walls of the class-rooms painted in light, cheerful, tasteful colours, to produce a cheering effect on the minds of the pupils. I should have big, open fireplaces to cheer and to ventilate the rooms. I should have, as an essential adjunct, a great room, where gymnastics, romping, dancing, and play should all have full scope, when the weather did not admit of the girls going out. I should not restrain romping and play, even in girls of eighteen, between classes. Girls between thirteen and twenty will romp well, if they are in health, and there is no pressure put on them that it is not the thing for them to do. I should not have more than four hours of good hard work at school, and two of preparation at home. The fact is, that our scholars lose the benefit for their health of the best part of our Scotch winter days, the forenoon, when we sometimes have both sunshine and dryness in tke air. By the time school is over the day is done.

Concerning the crying question of competition in girls' schools, Dr. Clouston is found to say that :—

One of the practices most energetically relied on in the higher class of girls' schools is that of the competition of one scholar with another. In some of them this competition is terrific. It extends to every subject; it becomes so keen as to put each girl who is in the foremost rank in a fever heat of emulation before the examinations. In some cases it overmasters every other feeling for the time being. No doubt, from the schoolmaster's point of view, it is the very thing he wants. In his professional enthusiasm he aims at the highest mental result. He is not professionally interested in the health or the special nervous constitution of his girls; he does not regard them as each one a medico-psychological entity and problem. I don't say this by way of reproach. All good men try to attain the highest result in their special departments. The educator has no means of knowing the constitution and hereditary weakof his girls—that the mother of one died of consumption, that the father of another was insane, that neuralgia is hereditary in the family of a third, that one has been nervous, another had convulsions when a baby, another has been threatened with water in the head, &c. His own education and training have not taught him to notice or know the meaning of narrow chests, or great thinness, or stooping shoulders, or very big heads, or quick, jerky movements, or dilated pupils, or want of appetite, or headaches, or irritability, or backaches, or disinclination to bodily exertion. But all these things exist in abundance in every big school, and the girls handicapped in that way are set into competition with those who are strong and free from risks. It is the most nervous, excitable, and highly-strung girls who throw themselves into the school competition most keenly. And they, of course, are just the most liable to be injured by it. All good observers say the intensity of feeling displayed in girls' competitions is greater than among lads, and that there is far more apt to arise a personal animus. Girls don't take a beating so quietly as boys. Their moral constitution, while in some ways stronger than that of boys, especially at that age, suffers more from any disturbing cause. The whole thing takes greater hold of them—is more real. It is more boys' nature to fight and forget, and take defeat calmly. Girls, I believe, suffer, when the competition in schools is too keen, in their tenderness of feeling and in their charity. They tend to attribute unfairness of motive to their teachers far more than boys, just because their affective nature is and should be stronger than their reasoning power.

In his further remarks, Dr. Clouston maintains that there is a real danger in the work of education being made, as it undoubtedly is, of a pleasant nature. The seductiveness of studies tends, he says, towards mental surfeiting of a dangerous kind; and there is no question that in the main the author is correct. He would have physical exercises taught in girls' schools, and he shows incontestably that the beauty of the female form can only be attained in the presence, and by the aid of, rich pure blood, in the production of which pure air and exercise are all-important factors. He would also have a periodical testing of a girl's growth and bodily progress :—

While education is going on, a regular periodic testing of the bodily growth and condition should also be carried out in the case of every girl. Her rate of growth should be marked by a notch on a stick every quarter. As regularly as the school fees are paid her weight should be taken, the colour of her cheeks and lips should be looked at and noted, her appetite and digestion should be looked to her habits of activity or otherwise should be observed, her power of sleeping should be noticed, the mode of growth should be observed —*e.g.*, whether her chest is expanding, whether her shoulders are

sloping or stooping, whether she is soft or firm in the flesh, &c. Her general mental condition, whether she is frolicsome or irritable, enthusiastic or sluggish, selfish and grudging, or not, is of great moment as an index of the general brain condition. Of course, anything like disorder of health, or pain, or sleeplessness, or want of appetite, or pallor, or thinness, should be at once attended to before they go to far. The great thing is to stop the beginnings of evil. If a girl has grown a couple of inches a year, then depend upon it she should not study hard. Nature has enough to do in such a case to firm up the body in proportion to its bulk. You want not only growth, but activity, grace of moment, alertness, strength. You won't have these if the girl goes on studying hard while she is growing fast. On October 1, I weighed and measured three children of one family, two boys and a girl, on their return to school after the holidays, and on November 30 I again did so. The boys had each gained four pounds in weight and grown half-an-inch, the girl had neither gained nor grown. The boys had had lots of play in the open air between lessons, the girl had been five hours each day continuously in school. The boys' class-rooms had been built for a school, the girl's class-rooms were in a small private house. If growth and increase in weight stop too soon, a wise parent will send off her daughter to the country to run to grass for a time, to see if mental inactivity will restore the body growth. If she is getting thin, let her live out in the open air, instead of in a school, till her appetite becomes ravenous, and she puts on flesh.

There can be no question that such practical advice is much needed, and every parent should lay Dr. Clouston's words to heart. His concluding words are full of power :—

I went last July to see the examination and distribution of prizes in a very large city school for young ladies. While the young girls there were very many of them fresh in complexion and plump, I must say that the majority of the girls above thirteen seemed to me jaded, and pale, and unduly thin. I did not see a dozen pairs of rosy cheeks in a hundred of them. To my eye, many of them bore very evident signs of over-brain work and deficient physical energy. They didn't look joyous and full of animal glee, as girls at that age should look. Like Dr. John Brown's terrier, "life was too full of seriousness" to them. Two Sundays after I was in a country kirk in the far north, where modern educational systems are as yet unknown, and I contrasted the appearance of the farmers' daughters there with that of the prize-winners in the city school. The difference was absolutely astounding. I only wish I could convey the impression I received in both cases from a critical doctor's survey of both sets of girls. If the one set exemplified health, robustness, organic happiness, strength, resistive power against disease, and potential motherhood, then beyond a doubt the other set did not fully do so. The question of the future is, How can we get, or how much can we get, of the intelligence and book-culture of the latter, combined with the health of the former? The health we must have, for it is requisite for the life of the race; the culture we must have in such degree as is consistent with the health.

Altogether such a powerful appeal to the good sense of the nation at large in the matter of "over-education" has not been heard for many a long day. These lectures deserve to be read and studied by every teacher and by all parents. They bristle with suggestive facts, as our quotations will show; and they constitute at once a defence of true education, and a trenchant criticism of the "cram" that too often does duty for culture. The motto of the sanitarian is the "beauty of health;" and Dr. Clouston, in telling us that our girls had better be healthy, happy, and long-lived with even moderate culture, than short-lived, over-educated units of society, is only re-echoing, in his own powerful fashion, the teachings of true science.

Sanitary Appliances, Etc.

MESSRS. BRAND & COMPANY'S FOOD PREPARATIONS.

It is almost superfluous to notice the high place and reputation which the house of Messrs. Brand & Co., of Little Stanhope-street, Mayfair, London, W., has assumed and obtained for the excellence of their various food preparations. Year by year, the fame of this firm has extended, until their productions have become noted for their uniform purity and strength, and for the reliance which medical men are accustomed to place upon them in cases where nourishment in a readily digestible form requires to be administered speedily and with ease. We have frequently had occasion to recommend the use of Messrs. Brand's preparations to those of our correspondents who have inquired of us the best means for giving the stomach and digestive organs that needful rest, which, in dyspepsia and allied disorders, forms the sheet-anchor and basis of rational treatment. In administering foods which are adapted to sustain the body readily and fully in the absence of solid and accustomed nutriment, it is needless to remark that the purity and strength of the condiments used form the first consideration of both the invalid and medical man. On both qualities of Messrs. Brand's preparations the strictest reliance can be placed. From a careful analysis of most of their manufactures, we can fully confirm the high and favourable opinion which the medical profession has formed of their excellence.

Of the products of this firm, the "Essence of Beef" is that most widely known. Prepared, unlike most of these essences, from the highest class of English beef, the purity of this essence is assured. The beef from which the essence is manufactured is carefully inspected by duly qualified hands, and each stage of its manufacture is supervised with the care of the practised chemist. The result of this care is the production of an absolutely pure essence of beef, of a clear amber colour, agreeable odour, &c., as proved by analysis, containing all the nutritive principles of the meat. Dr. Druitt expressed his opinion of the nutritive powers of this Essence of Beef, as compared with those of brandy, in the following words :—

"The object of my bringing it under the notice of the Obstetrical Society was to advocate the use of it as a partial substitute for brandy, in the treatment of the consequences of hæmorrhage, and other states of exhaustion incidental to the puerperal state. It will not supply the place of brandy during the early and urgent states of exhaustion from loss of blood, though, even then it is the best auxiliary; but it does very largely supply the place of an alcoholic stimulant in the treatment of the after stages, when the brain is suffering from anæmia, and when the patient complains of headaches, giddiness, and despondency, particularly in the early part of the day. It is equally valuable in states of mental depression arising from other causes, such as grief, mental shock, &c., in which the usual resort is wine or brandy. It may be taken as a stimulant after breakfast, at the time of the day when nervous feelings are most distressing, and when alcoholic stimulants are most pernicious, and most likely, if used at all, to lay the foundation of injurious excess. Out of the vast number of drunkards there are a few whose intemperance has followed the use of wine for the mental depression caused by anæmia. Bodily weakness alone does not tempt to drinking, except when it is attended with mental despondency; but with that combination it does tempt most strongly. But the 'Essence of Beef' (Brand's), freed from the grosser gelatinous particles, is directly absorbed, and exhilirates the brain specificially, causing the same phenomena, in a slight degree, as brandy does. It is in cases such as this, as a substitute for brandy, and as a means of preventing habits of drinking, and of curing them, that I more particularly recommend its use to my professional brethren. One tablespoonful taken early in the forenoon, with or without a little bit of crust and a mouthful of wine, gives the brain a something that relieves it from nervousness and vapours. It should be given, not as food at meals, but in the guise of medicine between them.

"In dyspepsia, likewise, it is a capital remedy, and one infinitely preferable to 'Pepsine,' as I venture to think. There are very many cases of general debility and emaciation, in which a gelatinous soup is preferable; but in the cases in which a nutritive stimulant, without bulk, is required, as in that hopeless disease called 'old age,' your readers may find that this liquid is a valuable addition to their stock of remedies. It may, if required, be flavoured with a little dill water or camphor, and administered out of a medicine bottle."

Of the other preparations of Messrs. Brand, of which we are able to speak in high terms of commendation, are the "Concentrated" brands of Beef Tea; Veal, Mutton, Chicken, and Turtle "Broths," and the "Turtle Soup and Jelly." A long list of tinned soups, all of excellent quality, is contained in the catalogue of the firm, and we have been especially pleased with the "Essence of Malt" prepared by Messrs. Brand. This is a concentrated essence of pure malt, preserving the aroma of the malt and its active principle. This essence will be found an efficient substitute for cod-liver oil, in cases where the oil cannot be taken, and by children especially the malt extract is much relished. Not the least ingenious invention of this firm is found in the "Savoury Meat Lozenges," which form a portable nourishment, well adapted for all who are removed for a time from ordinary sources of nutrition. In these days of trade com-

petition, when so many worthless food compounds are sent into the market, Messrs. Brand's products stand out conspicuously in the first rank of such manufactures. No higher recommendation can be accorded them than to say that they are of the finest possible quality, and that, for purity and freedom from all extraneous materials, they cannot be excelled.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

COLD AND COLD FEET.

Sir,—Allow me to bring under your notice a simple means whereby much suffering or inconvenience can be done away with this cold weather. All the year round, parents insist on their children washing in cold water. In spring, summer, and early autumn this is a good proceeding; but, when winter comes on with its cold and frosty nights, I do not think it at all desirable to allow our children, or even ourselves, to turn out of a warm and comfortable bed into a basin of ice-cold water. A good deal of bodily heat is thus lost; and in many cases, where the circulation is at all weak, the fingers may be numb for some time after, and the child unable to button his collar or fasten his clothes. This is a picture I have seen many times, and have vivid recollections of helping to fasten on a playfellow's collar many a time because his hands were so numb he could not do it himself. The fingers of such persons turn white, the nails purple, and the hands are cold to the touch and have little or no sensation in them—in other words, the circulation is almost stopped on account of the cold. I recollect as a school-boy having cold hands after washing in winter in cold water, but I remedied this by putting my hands in the warm bed from which I had arisen; I was then able to go on dressing. The remedy is to allow our young folks a small jug each of hot water, just sufficient to take the chill off the cold water. In the case of a school, a servant could go round and pour a sufficient quantity in each boy's basin just before he gets up. The result would be magical; instead of seeing boys coming into prayers shivering and blowing their fingers, they would come in cheerful; and, instead of having to sit in the study with their hands in their pockets to get them warm before being able to write, they would set to work as soon as they got down. I may say the same with regard to grown-up persons. It is, no doubt, very nice to be able to plunge into cold water; but there are many who find that the morning wash is anything but pleasant, and who have in consequence much work with buttons which their benumbed fingers cannot fasten. To these, a little warm water will be a great boon; and it is very easily got wherever there is gas, or an ordinary paraffin lamp will quickly heat sufficient. This is also a good plan where a sponging down is taken each morning. I have mine daily, and find I enjoy it as much as ever, though I do take the chill off the water. My inquiries amongst ladies tell me that nearly all of them use warm water in the morning, and I commend them for it. Such a plan would be unnecessary if we got up and had a good walk or some sharp exercise before proceeding to wash; then the blood would be circulating freely, and we should not feel the cold. Another topic is that of cold feet whilst in bed. This is a very common complaint, and one that causes a great deal of sleeplessness—first, on retiring at night; and again, early in the morning we are awoke by cold feet, and cannot get them warm except by drawing them up almost to the chin. This occurs not only in the young, but in the middle-aged and the old. There are two remedies—the hot bottle and lamb's-wool socks, either or both of which may be used. When we consider that during the day, whilst we are active, we wear stockings and shoes, does it not seem strange that at night, when the temperature of the air is lower, and when we are inactive, that our feet should have less covering than during the day? The reasonable plan is to have a special pair of socks for night use, put them on when going to bed, and change them when we get up; the result will be better and more serene sleep, consequently we shall be more able to undergo our daily exertions. I say at once, to all who suffer from cold feet, get a pair of warm socks, and keep for night wear. A good walk for half an hour before retiring warms the feet, and sends a nice glow all through the body, and disposes to sleep. Readers must not imagine that these remedies make one less able to stand cold—they are simply to retain the heat of the body and allow of comfort, and, if followed, much benefit will be obtained. T. R. Allinson, L.R.C.P., &c.

34, Claremont-square, N., Nov. 14, 1883.

ELECTRO-DENTISTRY.

Sir,—In reply to Dr. Wedgewood, I beg to say that the electro-denture was not my idea, but was suggested to me by J. McOscar, M.D. I designed and made it. At the time I thought it likely to be of so much use that it was my intention to bring it to the notice of the Odontological Society, but I was dissuaded by Dr. McOscar until it had been sufficiently tested. The results I found too unsatisfactory—from a medical point of view, at any rate—to permit of my bringing it, as a denture of any practical value electrically, before the Society. Dr. McOscar, whose experience as a medical electrician, and whose knowledge of the science of electricity rendered his opinion valuable, was of the same opinion as myself. Moreover, there was considerable risk, in the very few cases in which a useful current of electricity might be generated, of the mucous membrane, at the points of contact between the mouth and battery elements, becoming sore from the continued action of the current, the current in some cases producing a sensation of burning at these points of contact. The same trouble is sometimes produced even on other parts of the body by the use of some of the electrical appliances when worn continually. This difficulty might to some extent be got over if the patient were in a position to afford a duplicate and *non*-electro-denture, which could be worn alternately with the other, thus resting the mouth.—I am, Sir, yours very truly,

C. J. Boyd Wallis, L.D.S., R.C.S. Lond., &c.

P.S.—Since writing the above, I have discovered that neither I nor Dr. Wedgewood was original with our invention, for I have just been informed that precisely the same thing was introduced over twenty-one years ago by a West-end dental surgeon, and his electro-dentures were constructed according to the suggestions, and by the aid, of Mr. Piggott, a medical electrician. A copper coin, coupled with a piece of zinc, and placed in the mouth, will in some cases exhibit a higher E.M.F. than that named by Dr. Wedgewood; and, indeed, there are people who, when placed in circuit with a galvanometer, would exhibit a polarity of 10 deg. without a battery at all. A patent for what was termed "Perkins' Tractors" was taken out fifty-five years ago. They were composed of elements of zinc and silver, and were for the purpose of increasing the flow of saliva, being placed in the mouth at the pleasure of the patient. The E.M.F. of such arrangements in the mouth may vary considerably, from almost *nil* to a comparatively high E.M.F., according to the acidity or alkalinity of the oral secretions. Electro-dentures may with some people become positively injurious, inasmuch as in cases where the saliva is very acid or very alkaline they would aggravate the very trouble they were intended to remedy—at least, so far as dyspepsia is concerned.

C. J. B. W.

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

C. Bedlake.—A technical term for a part of the brain situated at the top of the spinal cord.

Eastern Gent.—We do not know the firm.

G. Otley.—The food is highly commendable.

G. Atkinson.—See an article in a former number on "Plants in Bedrooms."

D. A.—Try the first-mentioned.

B. G. O.—Sanitas oil should suit your purpose.

Elder, J.—An attempt to extort money. Resist it.

E. Noaks.—We think the system well adapted for you. Much

of success depends, of course, on individual capacity. Of all the systems we know it is the best.

Philan.—The book has long been out of print, and we learn the author has no intention of reprinting it at present.

E. F. G.—1. We intend shortly to begin our "Ambulance Lectures." 2. Yes; separate inquiries should be written on different sheets of paper. Same signature will do.

SANITARY.

O. M.—Goître, or "Derbyshire neck," is believed to arise from excess of minerals in drinking-water; but it is due probably to a combination of causes rather than to one cause alone.

A. Lancing.—Dr. Parkes gives about twelve gallons of water daily as the quantity used by a man in the middle classes:—cooking, 0·75 gall.; fluids as drink, 0·33 gall.; ablution, including bath, 5 galls.; utensil and house, 3 galls.; and clothes-washing, 3 galls.

B. G. C.—Try the second mentioned in your note. It is tolerably free from all defects.

T. Fisher.—We agree with you, but don't see how infection can be prevented. You cannot separate the clothes, any more than you can isolate the children from one another. Health here, as elsewhere, begins in the homes of the parents.

MEDICAL.

Dundas.—In such a case, and considering the advanced age of the patient, we should decidedly recommend you to see a good surgeon, who will be able to recommend means for relieving the pains, if not for curing absolutely. These ulcerations require careful and constant medical attention.

D. F. E.—We can send you the address you require on receipt of a stamped addressed envelope. In sending it please restate your inquiry.

Zuroff.—See and follow advice given to "Harry," in No. 34 of Health, and try the tonic for a time therein prescribed to "T. Fraser." You must give up all stimulants.

Beta.—Try the effect of taking "cod-liver oil cream" (to be had of Mr. Thomson, chemist, Dublin-street, in your city) for a time. There is probably nothing wrong; only, during all winter, clothe warmly and avoid chills. Don't eat late at night. Glad to advise again, if need be.

A Friend of Health.—The case is one of a stubborn disease, which often resists for a time all treatment. The administration of cod-liver oil, in small quantities after food, should be tried, and the following ointment may also be applied:—Oil of cade, two drachms; glycerine of starch, to make up one ounce. If not improved, write again.

J. F. S.—Yours is merely a case for rest, quiet, and strict attention to all details of general health. Don't get hypochondriac; and for a week or so take a teaspoonful of Fellows' "Syrup of the Hypophosphites" in a wineglassful of water after meals. Let us hear from you thereafter.

Chilblains.—Read our article on "Cures for Chilblains," in No. 30, Health, in which a large number of receipts are given.

Spero.—Give up the dumb-bells permanently, and also the morning bath for a time. You have not sufficient reaction. Take more open-air exercise, and avoid reading or writing at night. The eye-troubles will disappear when your general health is re-established. Take also the tonic recommended to "J. F. S." above.

A. Scott.—1. Try Maignen's "Filtre Rapide" (22, Great Tower-street, London, E.C.). 2. No lotions are of service. Attend to general health; cleanliness; and use a little pure Vaseline at night. 3. Yes. 4. No, not if used wisely and not too much taken. If you feel dyspeptic, replace the morning tea by cocoa or plain milk. 5. Depends on individual experience and constitution; if alcohol be taken at all, it should be taken at dinner.

Spero.—You were replied to in No. 34, Health. Read our "Notices to Correspondents." Your inquiry could not be answered in the week in which it is received.

Granule.—The treatment, so far as we can see, is appropriate enough. Yours is a case for general constitutional tonics, such as change of air, &c. Cod-liver oil, with syrup of iodide of iron added, might be taken for a time after food. In your case, consultation with a specialist in skin-diseases should benefit you, as you would probably be prescribed medicines which require care and supervision whilst they are being taken. Glad to be of any further service, if necessary.

John Fanny.—The person you name is a duly-qualified medical practitioner.

E. Manton.—No need to "despair." See and follow advice to "Harry" in Health, No. 34, and take the tonic therein recommended to "T. Fraser."

Harry (No. 2).—See advice to "Harry," in Health, No. 34. The tonic recommended to "J. F. S." in present number of Health should suit your case thoroughly. The "belts" you name are genuine articles, and may safely, we think, be tried. Glad to advise again, if necessary. Don't be morbid.

A. S. K.—1. Diet to be non-stimulant (not too much tea): vegetables, milk-puddings, &c. 2. "Pears'" Soap should suit you well. 3. Try the effect of a lotion composed of liquor of the subacetate of lead, one drachm; glycerine, three drachms; and water, to make up six ounces. Label, "The lotion; for outward use only." Apply this to the face occasionally, and report effect. 4. The mixture you name should not be taken continuously.

T. B.—Yours is a case in which we should hope much from a vegetable dietary. Give this advice a trial, and you may find all your symptoms relieved. Take a little more rest and sleep. Give up tea at night. Dumb-bells to be of light make.

M. H.—See article on "Chiblains" in Health No. 30.

H. T. W.—Follow the treatment ordered at Sheffield. We are inclined to think you exhaust yourself in swimming, and are hence liable to contract muscular cold and pain; but such attacks are often insidious in their nature, and all you can do is to guard assiduously against chill and cold. We fancy you would find the tonic prescribed to "J. F. S." above preferable to the other.

J. T.—Don't wash your head too frequently. This is a frequent cause of baldness. Rub a little Macassar Oil, night and morning, into the roots. Use simply Pears' Soap and tepid water once a week for the hair. We prefer camphorated chalk or magnesia as a tooth-powder.

Ernest.—Try benzoated zinc ointment (as recommended to "Christ Church," in Health, No. 33).

A. B. C. D.—Diet should be generous, but not stimulating; no need to give up the moderate use of meat; a fair amount of vegetables should be taken; and the claret and water is advisable. In winter cod-liver oil emulsion may occasionally be taken along with the food. When low in health, take the tonic recommended to "J. F. S." above. 2. Dumb-bells need not be discontinued, but don't overdo the exercise. 3. Study reaction after your bath as your best guide. If you feel chilly, give up the bath; but remember the risk of cold after tepid baths. 4. Possibly some little rheumatic affection, for which rub in warm oil over the joint. Avoid chills by all means.

A. H. W.—Cod-liver oil to be taken daily after food (a dessert-spoonful). Try cold sponging in the morning, if you have sufficient reaction.

F. J. M.—1. If no disease exists on either side, marriage of first cousins is safe enough. 2. No; not unless there is hereditary insanity. 3. No; the children would simply inherit the parents' constitution.

Tonquin.—We should decidedly recommend you to give vegetarianism a fair trial. In such cases as yours, it is eminently serviceable; but you should go cautiously to work, and don't give up meat altogether, for a time at least. You are probably a little nervous about your digestive troubles; but we think you will get all right with a little care. If you feel anxious about yourself, undergo a thorough examination by a competent physician. Try a little Morson's "Pepsine" along with the food. Glad to be of any further service if need be.

W. M'Pherson.—See advice to "Harry," and "T. Fraser," in Health No. 34.

R. M. B.—1. Cassell's "Family Physician" should suit you; or Dr. Chavasse's works, published by Churchill (London). Dr. Temple's book on the "Management of Children" (see Health, No. 26, page 12), and Dr. Davies' "1,000 Medical Maxims" (price 1s.), Chatto & Windus, London (see Health, No. 26, page 11), are all serviceable. 2. See article on "Chilblains," Health, No. 30. 3. Not necessarily injurious, but increase liability to cold. 4. The reaction is the great guide to the use of the cold bath. If chilled after the bath, give it up.

An Afflicted Scotchman is simply nervous, and has mistaken entirely the characters of the structure he describes. He suffers from no abnormality, and the condition to which he refers is in every way natural. He need have no anxiety, as he suffers from no complaint. Attend to cleanliness, and use plenty of soap and tepid water.

Rufus.—We are pleased to hear our advice has been so successful. Give up the tonic now, and try how you get on without it. Don't overdo the exercise. Medical men know quite well the nature of your trouble; but in your case, there was, as you remark, an omission in the advice you received. Glad to be of any further service.

Lily.—We fancy you might benefit from a course of cod-liver oil emulsion. We have seen cases like yours benefit much under general treatment of this kind. Try warm salt poultices for the knee; and warm oil rubbings. Your diet should be generous but

not stimulating—milk chiefly, with few vegetables. Lemon juice may be taken as a drink, but in your case we should hope most from attention to general health.

C. F. J.—1. You must see an ear-surgeon. Only an examination of the ears can detect the nature of your complaint, and settle the means of cure. 2. See advice above given to "Lily."

Mignon.—Try inhaling the steam arising from a pint of hot water into which 10 drops of tincture of iodine have been placed. This should be tried three or four times a day. If no relief is obtained, you might try the effect of the following:—English oil of juniper, 20 minims: light carbonate of magnesia, 10 grains; water to make up one ounce. Add a teaspoonful of this to a pint of hot water and inhale the steam three or four times daily. You would also benefit from a course of cod-liver oil emulsion. The hair should not be brushed with a hard brush.

T.—1. Your diet should be supplemented, we think, by light, nourishing, animal soups. A little of Morson's "Pepsine" should relieve you, taken along with food. 2. No; take the tonic recommended to "J. F. S." in present number. It ranks high above all others, and is safer than any other. 3. Simply because they cause irritation and reflex action in parts to which you wish to give rest. 4. None of the persons you name are qualified medical practitioners. The "reverend" gentleman is a quack of decided hue; the electrical appliances we know nothing of, but from what we have seen of the pamphlet we should imagine they are not calculated to produce electricity. If you can send us one, we shall test it for you.

J. Upton.—We should decidedly advise you to take cod-liver oil, or the emulsion, through the entire winter after food. This will give you stamina and strengthen your lungs. You might give the following cough-mixture a trial, and let us hear how it suits you:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half an ounce; infusion of senega, to make up six ounces. A tablespoonful every four hours. Clothe warmly.

A Reader of "Health."—We should advise for the gout first, great care in diet, with a little "Pepsine" to be taken along with the food. Abstain from fruits, port, sherry, ale, and porter. Claret or hock might be taken cautiously. Plenty of exercise is needed, and the diet should not contain too much animal food. Vichy or Carlstad water should be taken. We cannot advise you to tamper with patent medicines in such a case. "Patience and flannel" were Cullen's gout remedies, and for any active symptoms call in your doctor.

An Assistant.—Give up quacks and quack medicines, and read and follow advice to "Harry" in No. 34 Health. Take also the tonic recommended to "J. F. S." in present number. Be cheerful, and know that with attention to our advice you will in time get quite well.

J. F. A.—A case like that of your child is really a subject for careful medical supervision. The whooping-cough had nothing to do with the affection, which, if your doctor's opinion be correct, must have existed from birth. All that we can recommend are the general principles of warm clothing, rest, and a pure, mild air, with a nourishing diet. You have our hearty sympathy, and our best advice is to put the child more or less constantly under the doctor's eye.

Vox.—We fancy an inhalation occasionally would benefit you. Try the effect of placing ten drops tincture of iodine in a pint of hot water, and inhaling the steam for ten minutes or so. Take care of chill and cold thereafter.

Weak Eye.—Smear the lids at night with a little pure vaseline; and see to your general health. Rest the eyes at night, and try the practice of opening them occasionally while the face is plunged into a basin of cold water.

Hopeless.—Yours is a case of extreme nervous prostration. You are aware that it is more of mental than of physical kind. If you take our advice you will give up all stimulants, and try the tonic recommended to "J. F. S." in present number of Health, for a time. If not better, say in a fortnight, write again, and we will send you the address of a reliable physician, who will thoroughly examine and report upon you.

N. Roberts.—Strict cleanliness, and sponging the parts occasionally with a saturated solution of boracic acid. Persevere with the treatment, and you will soon be quite well.

An Obscured One.—See and follow advice given to "Harry," in No. 34, Health, and take the tonic recommended to "J. F. S." in present number. Be cheerful, and know that with attention to our advice you will soon get well.

Esperance.—Follow the directions for eczema in our "Hair" papers, and take the following:—Syrup of iodide of iron, three drachms; mucilage of acacia, one ounce; cod-liver oil to make up six ounces. A tablespoonful thrice daily, after food. If not improved, write again.

Hairwash W. E.—Try the effect of rubbing a little of Rowland's "Macassar Oil," night and morning, into the roots of the hair. If this simple remedy does not answer your purpose, kindly write again. The head may be washed once a week—not oftener, in your case.

Artemus.—We fancy there is some considerable irritation of the gland you name, and adjoining parts. In your case, a thorough surgical examination is necessary to determine the exact seat of the affection, and this we should advise you to arrange for as soon as you can. The "rheophore" would be of no service unless you exactly knew what the affection was; and its application is not adapted for amateur use. If you think of again consulting a London authority, we shall be glad, if requested, to name a competent surgeon for you.

J. R. H.—1. We believe the gold stopping is by far the best for all purposes. 2. The wens can be removed when they have assumed an ordinary size. No one can say "why" they are hereditary. 3. See two papers on "Headaches" in Part I. of Health, in which full information is given. 4. We should say limit the horse exercise for a time. You are apt to err on the side of overwork.

George the Martyr.—1. See notice to "Harry" in Health No. 34, and also take the tonic recommended therein to "T. Fraser." 2. Try dissolving a piece of borax the size of a pea in the mouth for loss of voice. Good voice lozenges are made by adding half a grain of benzoic acid to red currant paste. One such lozenge should be taken every four hours, and one a quarter of an hour or so before any effort is made with the voice.

Craven.—The following stimulant lotion for the hair may do you good:—Tincture of nux vomica, 3 drachms; distilled vinegar, 2½ oz.; tincture of capsicum, 1 drachm; tincture of cantharides, 6 drachms; spirit of rosemary, 1 oz.; rose water to make up 6 oz. Label "Poison. For outward application only," and rub into the roots with a small sponge.

F. R. S.—1. The analysis of the sample of the phosphorus preparation you sent showed, as we suspected, that it is useless as a remedy. "Free" phosphorus cannot be so combined. "Fellows' Syrup of the Hypophosphites" is a true nerve-tonic, combining all the excellence of phosphorus with other drugs. 2. The case you name is one for careful surgical examination. Throat and ear troubles are often associated. For the phlegm, an inhalation (for five or ten minutes, thrice daily) of the steam arising from hot water, to which ten drops of tincture of iodine have been added, will do good. We shall be glad to send you the name of a good aural surgeon in your city on receipt of a stamped and addressed envelope. The age of the patient renders his accurate examination a necessity.

W. M.—Yes; try the oil. If not bettered, re-state your case, and we will advise. Clothe warmly, and try hot salt baths for the rheumatism; and also try the tonic recommended to "J. F. S." in present number. Make a change in your dietary, and take a little "Æsculap" water in the morning. This latter will probably cure the stomach and head troubles.

S. M.—Touch the little "warts" carefully with a little aromatic vinegar from time to time. This is an unfailing remedy. They arise from some irritation, but it is hard to say the exact nature of this latter. Possibly the hat-lining, together with the sweating of the brow, may have had an effect.

W. H.—We do not know the composition of these hair preparations, but a recent law-suit showed some curious facts about the curious nature of such substances. Read our papers on "The Hair" in the early parts of Health, and you will find therein full information regarding your hair troubles.

Kilmarnock.—Try Tulloch's "Pure Dutch Cocoa," or Van Houten's. Both are extremely good and pure. Dilute in your case largely with milk, as directed.

Norvicensis.—Glad to hear that you have now been successful with the dye. We knew there was no special peculiarity in the dye.

J. Branston.—1. Read our "Hair" papers in early numbers of Health. There is no reliable and safe preparation for "forcing" the moustache. 2. Yes; we should advise you to be medically examined. There is some irritation either in the kidneys or elsewhere which should be seen to. Probably the cause is simple; but it can only be detected by examination. 3. Wear a suspensory bandage, and use cold sponging.

Milo.—See advice to "Harry," in No. 34 of Health, and take the tonic recommended to "J. F. S." in present number. Don't overdo your exercise; you overdo it as things are. Rest more, and study moderately. What you name is often a sign of health. When your health is fully established, the symptoms you mention will disappear. Glad to be of any further service.

Frank.—Try the following (and, if not bettered, write again):—bi-carbonate of soda, one drachm; glycerine, an ounce and a half. Apply as a lotion to the affected parts.

[*Continued on page* 160.

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R. T. S.—Take the tonic recommended to "J. F. S." in present number, and let us hear how you are after a week or ten days' trial thereof. Clothe warmly and avoid chills.

South Foreland.—1, For the itching, use the lotion above recommended to "Frank," and if not bettered write again. 2. The vaccination had nothing to do with the affection you name. For the eruption, try the effect of benzoated zinc ointment applied on a rag to the parts.

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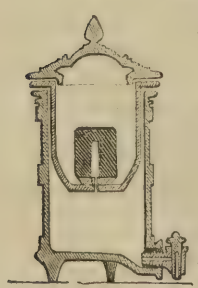

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, DECEMBER* 14, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

Hanging and public executions have, together, become both a public and scientific study. The ways and works of the new executioner in his ghastly business have formed the subject of a vast number of comments from the lay and medical press. Comparisons of the methods of Marwood with those of his successor have been frequent, and it would seem as though, for the time being, the proper conduct of executions was the leading topic of the day. The latest contribution to the subject is that of Dr. B. W. Richardson, who, in an article published in the *Lancet*, discusses the "Modes of Death in the Execution of English Criminals." Dr. Richardson's paper is a highly interesting one. It deals with the theme from a scientific standpoint, and it is needless to point out that the subject of "hanging," apart from any morbid sentiment which may attach to it, is one involving a number of considerations highly interesting to the man of science, as well as important from a humanitarian point of view.

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The English law directs that the criminal "shall hang by the neck until dead." Now, it is exactly this form of death by suffocation which, as usually administered, the last sentence of the law does not carry out. There is no doubt that in the vast majority of cases criminals have had their necks dislocated by the "long drop." In such an event, the spinal cord (or great main nervous axis which is a continuation of the brain through the spine or backbone) is broken or severely injured. The accident, moreover, takes place at a part of the cord where it is specially susceptible of fatal injury—namely, near its top, or where it leaves the brain. Here the great nerves that exercise control over heart, lungs, &c., originate, and the criminal who perishes by death on the "long drop" dies—like the rabbit which a gamekeeper kills by a sharp stroke on the back of the neck—a sudden and threefold death. The heart's action is arrested; breathing ceases; and swallowing is rendered impossible. But, all the same, the death is not one by "hanging," pure and simple. It is death from fracture of spine and spinal cord.

Dr. Richardson points out that in the recent execution at Liverpool, where the pulse could be detected beating for eight minutes after the drop fell, death occurred from pure suffocation by "hanging." In Calcraft's time, this form of death was that commonly carried out. In nearly all forms of suffocation the heart continues to beat for some time after consciousness has entirely disappeared. Dr. Richardson, therefore, shows what physiology teaches—namely, that notwithstanding all the recent excitement regarding the Liverpool execution, death was painless, even if more gradual than where the spine is broken. In suffocation, the circulation of blood through the brain is impeded, the breathing ceases, and insensibility is thus produced. We have heard of a case in which a person committed suicide by merely resting his neck on a handkerchief he had suspended between two chairs. The pressure on the blood-vessels of the neck produced unconsciousness; and this gradually deepened as the weight of the body tended to greater compression of the vessels, and finally ended in obstruction of breathing and death. That the practice of "hanging" is, therefore, a humane form of death, is, as contended by Dr. Richardson, apparently proved. The "long drop," he argues, entails a painful form of death, more especially as death is not invariably produced quickly or instantaneously by this process. The whole question is one of humanity, in the advocacy of which Science raises her voice in a powerful appeal to the powers that be, to see that if executions are still to form part of our system of legal punishments, they shall be carried out in the fashion least barbarous and most consistent with sure and speedy extinction of life. One thing is at least clear—the question of method should not be left for the decision of an ignorant executioner, but should be finally pronounced upon by a committee of scientific men, whose advice the Home Secretary should certainly obtain.

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An instructive item in the history of typhoid fever and its origin has just been communicated to the medical press by a medical man in practice in Cape Colony. He attributes sudden outbreaks of this fever, in cases where no history of infection was present, to the presence of cattle manure allowed to accumulate so as to infect the air. The changes which the manure undergoes may probably produce a certain condition favourable as a breeding-ground for the germs of the disease. The disease may thus arise independently of infection from a previous case or cases; but, once produced, is capable of being conveyed by the ordinary channels of infection to other human beings. The lesson to be learned from this observation is that of keeping milk, water, &c., free from all danger of contamination by cattle manure. Sheep manure, curiously enough, does not appear to possess the same relations as those presented by cattle manure to typhoid fever. The whole topic is evidently one for the careful thought and investigation of sanitarians. Meanwhile we find in the observations of Cape Colony a new argument for stringent cleanliness in our dairies. Many mysterious outbreaks of typhoid fever in dairies may possibly have had their origin in accumulated manure-heaps.

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The vegetarians have been recently flooding the *Lancet* with protests against the remark of our contemporary that abstinence from flesh foods generally "was not advisable." In a sensible rejoinder, the *Lancet* points out that the question (as has more than once been shown in Health) is one for wise personal experience; that while there are

many who may live healthily on a vegetable dietary, there are others to whom such a dietary would bring weakness and ill-health; and that whilst we hear continually of wonderful cases of cures of disease and of healthy-living brought about by the practice of vegetarianism, we never hear anything of the failures of that system. Perhaps there are no failures—but the supposition is improbable, unless vegetarianism is unlike every other human institution. We re-echo very heartily the *Lancet's* remark that this exhibition of bigotry on the part of vegetarians is much to be regretted. The "Food Reform Society" is a useful and admirable organisation. It teaches the people the possibility which exists of supporting life healthily on cheap and simple fare. But it loses all its influence when, neglecting the teachings of science, it converts its power into a means of special pleading of unwarranted kind. The vegetarians should not forget that if they are to follow Dame Nature throughout, they must take into account the fact that we begin life, and lay the foundation of our frames, not on a vegetable dietary, but on Nature's own food—the type of all foods—milk itself.

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The phrase "tears of blood" has often been quoted in a metaphorical sense; but it would now seem to be a well-proved fact that, in certain cases, blood may drop from the eyes in place of the tears. There would appear to be no eye-disease in these cases, any more than in the case of Louise Lateau, the Belgian "stigmatic," there was any disease of the skin where the bleeding marks of the so-called "crown of thorns" were seen in her case. The "bleeding tears" occur, as a rule, in nervous, hysterical young women; but we may readily see how, in such cases, the addition of a little religious mania or superstition would easily convert a physiological curiosity into a "modern miracle."

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Our instalment of Dr. Gibson's articles on "Cottage Hospitals" has this week been crowded out. We shall resume these interesting papers in our next issue.

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A curious case of trance has lately terminated in Glasgow. The patient was a woman 35 years of age, and since June last she lay in a state of coma or trance, motionless, with closed eyes, a pulse of about 80 per minute, natural temperature, and normal breathing. Consciousness was entirely absent, until at the end of November she suddenly awoke, and is now recovering her wonted strength. She was daily watched during her long sleep in the Western Infirmary of Glasgow, having been fed daily by means of a stomach-tube. The case is a curious and well-nigh unique one, on account of its prolonged nature. These cases of trance are the puzzle of the physiologist, and under ordinary circumstances are liable to simulate death so closely that patients have occasionally been in danger of living burial.

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The danger of feeding infants upon biscuit-food was illustrated recently at Exeter, where the City Coroner called attention to several cases in which death had occurred through such a practice. It seems to be a hard task that of teaching mothers that milk is the only true food for infants under the age of six or eight months.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

STORIES OF SCIENCE AND CRIME.

II.

One of the most curious and puzzling cases of identification, complicated by a similarity of name, is that of Caroline Walsh, related by Dr. Taylor in his "Medical Jurisprudence."

A woman named Elizabeth Ross was tried at the Old Bailey in December, 1831, for the murder of an Irishwoman named Caroline Walsh. Walsh had consented to live with her and her husband, and, on the evening of the 19th of August, 1831, the deceased went to the residence of Ross, in Goodman's Fields, taking with her as her belongings a bed and a basket. The latter contained the tapes and other odds and ends which Walsh was accustomed to sell by way of earning a scanty livelihood. All traces of Caroline Walsh vanished on the evening of the 19th of August. When Ross was interrogated respecting her visitor and lodger, she at first replied in an unsatisfactory fashion, but ultimately stated that Walsh had left her house on the 19th, and that nothing had been heard of her lodger since. It was proved, however, by the testimony of Ross's son, that his mother had suffocated Walsh on the evening of the 19th of August, and had disposed of her body for anatomical purposes.

A most singular element now appeared in the case. On the evening of the 20th of August an old woman, giving her name as Caroline Welsh, was found in the neighbourhood of Goodman's Fields in a state of squalor and filth, and was duly conveyed to the London Hospital. It was discovered that she had sustained a fracture of the hip, and after a few days' residence in hospital the patient died and was duly interred. At the trial it was argued that the Caroline Welsh of the London Hospital was in reality her late lodger, and hence it became important to settle the marvellous identity which had thus arisen between the missing lodger and the hospital patient. The former, as has been stated, was an Irishwoman, but so also was Caroline Walsh. It was found out, however, that Caroline Walsh came from Kilkenny, whilst the hospital patient hailed from Waterford.

This first point of difference was speedily followed by the discovery of other distinctions fatal to the prisoner's case. Caroline Walsh was described as being eighty-four years of age, tall, of a pale complexion, and had grey hair. Caroline Welsh, who died in hospital, was about sixty years of age; she was also tall, but was of dark complexion. Further, Caroline Walsh was cleanly in person, and exhibited no defect in physical conformation. Caroline Welsh was dirty and emaciated, and her feet were so covered with corns and bunions as to present the appearance of being deformed. In dress, however, the two women were very much alike; and, more curious still, both possessed baskets of similar make, that of Welsh having a cover, which the basket of Walsh wanted.

It may be said that, with the evidence as to the difference between the women in question, and with positive evidence as to the death of Walsh, little doubt could have existed as to the identity of each. But the confusion of name, dress and occupation was effectually set at rest by one remarkable observation—namely, that Caroline Walsh, the murdered woman, was known to possess very perfect front teeth—a fact sufficiently remarkable in a woman of her age to attract the attention even of unscientific observers. Caroline Welsh, on the other hand, was found to possess no front teeth, and the medical evidence given at the trial proved that the sockets of the front teeth had been obliterated in the hospital patient for a very lengthened period. This latter difference between Caroline Walsh and Caroline Welsh was too typical to be combated by the ingenuity of counsel or by the circumstances which favoured the prisoner's defence; and Elizabeth Ross was found guilty, and duly executed for her crime. It formed a notable fact of this inquiry that the body of Caroline Walsh was never discovered, although the London dissecting-rooms were duly searched. But the case against Ross was rendered the more conclusive when the granddaughters of Caroline Walsh, on being shown the remains of Welsh, distinctly alleged that the body was not that of their relative.

The famous Tichborne case presents a notable instance of the high importance which may attach to a question of identification. In the course of this celebrated trial, various

interesting points were raised, involving questions of a medical nature. The real Tichborne was known to have had an issue on one arm, and as this had been kept open for some time, it must have left a scar; but the Claimant had no such mark. No marks where bleeding had been practised on arms, ankles, and temple, in Roger Tichborne, were found in the Claimant; and the tattooing of the former was absent in the latter. A mark above the left wrist in the Claimant received no explanation from him, while the prosecution alleged that this mark was the scar which resulted from the obliteration of the letters "A. O.," which, presuming him to be "Arthur Orton," had been there tattooed.

A curious case occurred in 1875, and was duly reported in the *Dover Standard* for December 25 of that year. On December 9 the body of a man in a mangled condition was found near the Addison-road Station, and was identified by a woman named Triggs as that of her husband. The employer of Triggs and one of Triggs' children also identified the body. At the inquest, the identity of the deceased with Triggs was assumed to be unquestionable. As the hearse, however, advanced to the house for the interment of his body, Triggs himself walked into the bosom of his family, and gave a satisfactory account of his absence. The account says nothing, however, of the further history of the deceased man. Possibly in this, as in many other cases, no clue was ever obtained to his identity.

Famous still in the records of medical jurisprudence is the Waterloo-bridge mystery.

In the beginning of October, 1857, a carpet-bag was discovered on a buttress of Waterloo-bridge, London. On being examined, this bag was found to contain portions of a human frame, which had been so treated as to present a veritable illustration of the disposition of Cassim Baba by the robbers in the "Forty Thieves." In all, some twenty-three portions of the frame were discovered, these being parts of one and the same body. The portions missing were the head, the greater part of the spine, the hands, feet, and left side of the chest; whilst the internal organs were also wanting. The questions submitted to the medical inspectors for the guidance of the police in the investigation of the crime had reference to the sex, age, and height of the deceased; the cause of death; the period which had elapsed between the occurrence of death and the finding of the remains; the state of the body as indicative of its having formed the subject of anatomical research or not; and the presence of any peculiarity, normal or acquired, the discovery of which might lead towards the identification of the body.

These queries were on the whole answered with an accuracy and fulness which bespoke volumes for the patience and skill of the medical inspectors. The remains were those of a man who, judging from the full development of the skeleton, must have attained the age of between thirty and forty years, and must have measured about 5 ft. 9 in. in height. The person was probably dark-haired, judging from the colour of the hair of the wrists and knee. A stab had been inflicted between the third and fourth ribs on the left side of the chest, and in such a situation as to have penetrated the heart, whilst the appearance of the wound led the inspectors to declare that it must have been inflicted during life, or immediately after death; the former alternative being that most consistent with the facts of the case. The cause of death was, therefore, seen to be perfectly consistent with the theory of murder, and that of a very deliberate type.

Equally important for the purposes of the detective was it to fix the probable date of the commission of the crime; but on such a point speculative rather than actual evidence alone could be offered. It was noticed that, from the perfect state of preservation of the remains, they must have undergone some preservative process, probably with the view of preventing discovery through their decomposition. They must, in fact, have been boiled and salted, and this latter feature alone may serve to indicate the cold-blooded and deliberate nature of the crime. The fact that the remains had thus been artificially preserved rendered the calculation of the period of death difficult, and in any case uncertain. But from an examination of those portions of the remains which were least affected by the process of preservation, the examiners came to the conclusion that the person might have been dead for three or four weeks prior to their examination of the remains; or, in other words, that the subject of the Waterloo-bridge murder was probably alive in the latter part of September, or even at the beginning of October, 1857.

Not a particle of evidence was forthcoming to show that the remains had been used for anatomical purposes. On the contrary, the manner in which the parts had been separated, and the clumsy fashion in which parts which could have been readily disjointed with the scalpel were separated with the saw, proved the murderer to have been thoroughly ignorant of the veriest rudiments of anatomical knowledge. But the practice of the public in frequently rushing to the conclusion that mutilation must of necessity be the work of the medical student, is founded upon an entire want of appreciation of the labour and nicety involved in anatomical study; whilst such a supposition can only favour the escape of a criminal, by distracting attention from the true state of matters, and by thus affording him time and opportunity for escape.

In the latter case, no peculiarities of structure existed which could have been singled out with a view to the identification of their possessor; and hence, owing largely to the want of this particular kind of evidence—the kind of testimony which tells most favourably in the hands of the detective—the Waterloo Bridge tragedy, in all its ghastly details, has tacitly passed into the limbo reserved for the undiscovered horrors of our own and other ages. Not a single direct clue was forthcoming as to this mysterious crime. The articles of clothing found in the bag afforded no certain evidence of the nationality of their possessor. They were torn, and stained with blood; and a very distinct stab must have been inflicted through the double collar of an overcoat, this injury probably being of an equally fatal nature with the stab already spoken of as having been inflicted in the chest. The police inquiries appeared to point to the shifting maritime population of the Thames as the most likely source in which a clue to the mystery should be sought. A Swedish sailor was believed to have been the victim; but there were not wanting those who thought then, and think even now, that the crime was of deeper nature than that indicated by the hypothesis of a seaman's quarrel. The care shown in the disposition of the remains was said to be inconsistent with the unskilled ways of sailors, and pointed, along with circumstances of the death, rather to the revenge of more accomplished assassins. The fate of Count Fosco, in Wilkie Collins's "Woman in White," is thus believed to have been that of the victim whose remains came to rest on Waterloo Bridge in 1857. The fact of the deceased having probably been a foreigner, and possibly being in hiding in London from his enemies—on the latter theory of the crime having been one of political revenge—may account for the want of success which met the efforts of the police in tracing his identity.

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HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

EIGHTH PAPER.

The *drink cures* can only be truly characterised as insufficient, useless, and, unfortunately, even dangerous. As a rule, these methods of treatment are unconnected with any regulation of diet, and depend upon drinking of cold or warm water, or of salt and water (either the ordinary cooking salt or Glauber's salts), which may or may not contain iron. This is the kind of treatment so fashionable in many German watering-places to which many of our physicians have recommended their patients, much to the damage of the latter. Though I should be sorry to infer that any other object has been in view but to benefit the patient to the best of the

physicians' belief, still there are those who think that this pandering to a fashionable mania would seem to have been utilised on the principle of "You scratch my back and I'll scratch yours." Doctor So-and-So, of the modern Babylon, recommends Lady Gourmandine to go to *Bad Von Grand Humbug* and consult his friend, the learned Dr. Von Cure Everything, and after a residence of six weeks or two months Dr. Von Cure Everything strongly advises Lady Gourmandine to return to the modern Babylon, and to regularly consult his friend, the fashionable London doctor. Now, this is said not unkindly, but simply to draw the attention of physicians to the fact that the results of a temporary residence at a fashionable watering-place, whether with or without a certain course of diet and regimen, cannot be permanent; and that the plan is often harmful I have had many proofs, as ladies and gentlemen, especially the former, have come back to London pale, weakened, with irritable hearts and perturbed tempers, and have very soon regained the fat which the purgative waters they had taken, added to low diet and regular living, had abstracted from them. Had those physicians explained to their patients that the same effects could have been produced without going to any baths whatever, they would have spoken the truth, although, perhaps, knowing the weakness of human nature, they thought that their advice would either not be followed or believed in. I do not wish to be understood to condemn the custom of visiting either foreign or English watering-places, but I wish to purify such a course from all humbug, and to make it plain to the public that however often and however long they may go to baths, and however much money they may spend, that the cure will not be permanent unless a proper dietary—one that is conformable to modern physiological principles—be adopted and persevered in, as a matter for their lives.

Sir Benjamin Brodie, the first surgical authority of his day, truly said:—"There is no sanatorium on the continent to which a parallel cannot be found within the British Isles, to which delicate patients may resort in summer or in winter, without exchanging their own language for a foreign tongue, without being mercilessly fleeced by strangers, and with a certainty that air, climate, scenery, and water will do them as much good as they can ever expect to derive from foreign parts." And I would add, there are plenty of first-rate health-resorts and establishments in this country where the too fat or too lean can derive every benefit at a far less expense. Continental journeys are only fashionable follies; they are certainly not necessary, and they have been often prejudicial to health and pocket.

People are too apt to forget—or, perhaps more correctly, have not the acumen to perceive—that change of air, scene, climate, and mode of life often do the good which is put down to a certain reputed water. At best, the active ingredient of most of these foreign waters is common Epsom salts, which, being purgative, acts by reducing the body-weight at the expense of the patient's strength. All these water-drink or bath cures, especially when combined with modifications of Banting's diet cure, may be placed among the *abstraction* cures, *i.e.*, those that aim at cure by abstracting from the body excess of material taken, and act on a wrong principle.

The *dietetic cures*, so-called, are of two kinds. In the one, changes in the quality of the food are alone insisted on; and in the other, *regimen*—*i.e.*, the mode of life—as to exercise, air, climate, &c.—is ordered; but all the cures which have been fashionable hitherto are, in reality, *reducing* or *abstracting* cures—that is to say, they diminish the fat at the expense of the bodily health. Physiology teaches that the proper course to pursue in order safely and permanently to conquer obesity is by a combination of appropriate diet with a suitable mode of life, the only question being as to the best dietary and manner of living. I would here insist that, in my view and experience, the treatment, to be rational, must vary with the individual peculiarities of each case, which must be treated on its merits; and, moreover, that *it is unwise, as a rule, attempting to gain too rapid results.* The diet and mode of life must be so arranged that the patient can continue them with comfort and benefit for the rest of his days, if necessary. It is comparatively easy to make a fat person rapidly thinner, but this heroic treatment can only be applied for a short time, because it is inefficient and dangerous, and when it is left off, the patient, if his health be not ruined, soon becomes fat again. The difficulty hitherto has been to discover a method by the use of which the sufferer continues to feel well and strong, so that he is thereby encouraged to persevere in it. It is well to have it clearly understood at the outset, that a good deal of moral courage and strength of mind are necessary to persevere with the exercise ordered; but in the end perseverance will assuredly lead to success, and use and habit will soon make it to become a second nature. Moreover, there is just this encouragement, that in some cases the constitution may in time become sufficiently changed by the diet and manner of living adopted, so as to render a very strict adherence to the rules less necessary; but if the stomach be a person's god, as in those lovers of the table who would rather lose years of their life than give up the good things of this world, such people had better not begin the cure. People of this sort argue that they require a lot of nourishment to keep up their frames; this is a convenient statement, but at best only a poor cloak to disguise their weak natures. It is no use trying to convince them of the truth of the statement that to prevent, or to cure, obesity, an alteration in the *quantity* of their diet and of their mode of life, according to physiological principles, is absolutely necessary. Even Shakespeare's authority:—

> "Make less thy body, hence, and more thy grace;
> Leave gourmandising; know the grave doth gape
> For thee thrice wider than for other men;"

will, I fear, have little effect on them; but rather, as the Devil can quote Scripture to suit his purposes, they will reply, with scriptural emphasis, "Let us eat, drink, and be merry, for to-morrow we die."

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

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The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HOW TO CLOTHE CHILDREN.

By Ada S. Ballin.

THIRD PAPER.

Boys and girls should be dressed alike till the boys are breeched. From the time they are short-coated they should wear next the skin a garment of flannel or spun cotton—linen, silk, and calico are bad, be the weather warm or cold, because they do not absorb the perspiration. Over this should come a long-sleeved and high-necked bodice, fitting to the figure so as to give support without pressure; the drawers and petticoat, or petticoats, should be fastened on to this, so as to distribute their weight equally. Combination-drawers and vest are very convenient and good, provided the edges overlap each other where they fasten, so that no part shall be exposed; and then the petticoats only—which should reach to the ankles—need be fastened to the bodice. Socks ought never to be worn, and the stockings should be pulled up about a couple of inches over the ends of the drawers, which ought to fit round the knee, and be fastened with suspenders to the bodice under the petticoats, as the pressure of garters is injurious. As to the colour of flannels and stockings: white is the best, for white things show the dirt, and are likely to be changed oftener than coloured, which is a great advantage, for, as Dr. Richardson says, "Health will not be clothed in dirty raiment;" moreover, dyes bring new dangers. The colouring principle of the aniline dyes, of which the worst are the red and yellow coraline, is a very active poison, and produces an eruption on the skin which has more than once been mistaken for erysipelas, but which disappears when the irritating cause is removed. In No. 3, Vol. 1. of this Journal, p. 34, attention was drawn to Dr. Woodland's cases of eruptions on the legs and feet caused by wearing red stockings. Yet such is the wanton ignorance on this subject that red flannel is frequently worn next the skin, and in every chemist's shop we see dozens of "chest protectors," made of material dyed with this poisonous stuff, in spite of the fact that so long ago as 1876 Dr. Richardson published a case of disease resulting from the wearing of such a "comforter," together with some strong censure of the use of the aniline dyes.

A very pretty and most durable winter dress for a child under five can be crotcheted or knitted out of thick Berlin wool; it should, like all children's dresses, be made to reach throat, wrists, and ankles, not according to the absurd fashion of making dresses low where they ought to be high, and high where they ought to be low. In choosing materials, care must be taken to avoid weight while securing warmth, and above all, they should be inexpensive and strong, so that the child may not suffer from being forbidden healthy play lest its clothes should be spoiled. It must be a poor sort of mother's love—and yet it is a very common one—which prefers the welfare of the clothes to that of the child. If a woman wants a block to set fine clothes on, let her get one made of wood or wax, but not turn her little boy or girl into one.

I cannot do better than describe here one of the prettiest children's dresses I have ever seen, which at the same time was one that would bear any amount of hard usage. It was on a girl about five years old, and was made of rough sage-green serge—arsenic green must always be avoided. The body was finished at the throat with a little frill, and the sleeves, which were long to the wrist, had a small puff at the shoulder. The skirt fell in loose folds to the ankles, and its junction with the body was covered by a sash of the serge loosely tied round the waist. The child wore a grandmother bonnet of the same stuff.

Skirts and petticoats should always be loose enough to allow every freedom of movement. Scotch suits for boys are an abomination, since they expose the knees. The prettiest and best dress for them when breeched is the sailor's suit, which, by its looseness, allows free movement, is very durable, and covers all the limbs. The jacket must not, however, as is sometimes done, be cut low in the neck, or, if so cut, it must be filled up with a thick white flannel, so as to keep the warmth equal. Under the suit flannel drawers and vest should be worn.

The subject of boots is an important one, since the vast majority of feet are injured permanently through the wearing of badly-fitting ones. Till the child begins to walk, white woollen knitted or crotcheted socks are all that is required. After that time the boot should be made exactly to fit on the foot, and of a soft, yielding kid, so that there shall be no pressure on any part, while there is no room allowed for the foot to become deformed by spreading. There must be no roughness on any part of the inside, or corns will result; and the boots must be given up directly they are beginning to be outgrown. They should be laced or buttoned, and should cover the ankle so as to give it support. For weak legs they may be made very high, and should only be taken off when the child goes to bed. In cases of great weakness inch-broad strips of thin steel may be inserted between lining and leather from the top of the boot right down each side of the ankle; these may be made as high even as the knee, and will be found more comfortable, being very much lighter than the irons usually worn for incipient bandy legs.

However desirable economy may be, it must not be practised in the following cases, for then it would be injurious to health. We must not grudge paying our laundresses' bills, or if we cannot afford to have every article worn by our children washed twice or thrice a week, we must turn up our sleeves and wash them ourselves. We must never let children wear clothes they have outgrown. Boots must always be made to fit, by good makers, and of the expensive material I have described—what is called glove-kid, and each child ought to have two pairs, which should be worn on alternate days. The little ones must have clothes suitable for every kind of weather, so that they may never be kept indoors because they have nothing fit to go out in. They must have changes of clothes in case they come in damp. And last, but not least, however great the damage be to clothes, nothing must induce us to interfere with the little ones' romping play, for it is that which will help them to grow up strong men and women and useful members of society, instead of puny hangers-on at the skirts of life.

THE PREVENTION OF BLINDNESS IN INFANTS.

The following excellent popular directions for the prevention of the frequent form of blindness arising from the destructive eye-inflammation of newly-born infants is being published and diffused by the Society for the Prevention of Blindness. "One of the most frequent causes of blindness is the inflammation of the eyes of new-born babies, a disease which can be prevented and always cured.

In almost all blind-schools in England and the Continent, a third, and even more, of the children's blindness is caused by the neglect and unsuitable treatment of this disease. In the Wilberforce School for the Blind at York, it is said that, out of eighty-nine pupils, thirty-seven are blind from this cause; and several eminent oculists state that half the blindness in Europe is due to this inflammation of the eyes of new-born babies. This frequent blindness is largely owing to the general ignorance of mothers, and to the unpardonable neglect of the midwives, nurses, and others who have charge of the infants in their earliest days. In many cases these persons prevent resort to skilled medical assistance, in order to try some unsuitable domestic remedies, until it is too late, even by the most skilful treatment, to save the child's sight. Although the disease appears sometimes in a very mild form, it may still, without some suitable treatment, have an unfortunate issue; but in most cases the disease takes a more determined character, and then, if left to itself, it may develop with such rapidity that, in the course of a day or two, all hope for preventing blindness is lost. In general, newly-born babies seldom suffer from any other eye-disease, and its first appearance is easily recognised by the redness, swelling, and heat of the eyelids, and by the discharge of a yellowish-white matter from the eyes. This dangerous and ruinous disease is always curable if treated at once. Immediately on the first appearance of these symptoms, send for a medical man; and, until his arrival, proceed at once to keep the eyes as clean as possible by very frequently cleansing away the mattery discharge. It is the discharge which does the mischief. The cleansing of the eye is best done in the following manner. 1. Separate the eyelids with the finger and thumb, and wash out the matter by allowing a gentle stream of tepid or warm water to run between them from a piece of rag or cotton-wool held two or three inches above the eyes. 2. Then gently move the eyelids up and down in a circular way, to bring out the matter collected under them; wipe it or wash it off in the same manner. This cleansing will take three or four minutes, and is to be repeated regularly once every half-hour at first, and later, if there is less discharge, every hour. 3. It must be borne in mind that sight or blindness depends entirely in these cases on the greatest care and attention to cleanliness. Small pieces of rag or cotton-wool are better than a sponge, as each rag is to be used only once, and should be burnt immediately; sponges should never be used, except they are thrown away or burnt after each washing. IV. A little washed lard should be smeared along the edges of the eyelids occasionally, to prevent them from sticking. V. The eyes should not be covered up by any bandage or handkerchief, as the discharge is thereby prevented from escaping. VI. Fresh air and an equal temperature in the sick-room are absolutely required, and the eye, while suffering from the disease, should be kept carefully from all strong lights. Many cases of this disease might be entirely prevented by cleanliness of the eyes. 1. Immediately after the birth of the baby, and before anything else is done, the eyelids and all parts surrounding the eyes are to be wiped with a soft dry linen rag; afterwards, these parts must be washed with tepid water before any other part is touched. 2. Avoid exposing the baby to cold air; do not take it in the open air when cold; at any rate, dress the infant warmly and cover its head, because cold is also one of the causes of this eye-disease.

If we use up our life-force in brain work we have little left for muscle, and *vice versâ*.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION, AND HEALTH.

By B. H. Thwaite, F.C.S., A.M. Inst. C.E., &c.

A home, however beautiful and complete its appointments may be, if its drainage arrangements are defective, must be unhealthy, and may be compared to a fruit, beautiful in appearance, and apparently sound, but which on examination is found to be rotten and unfit for food. From the palaces of the Royal family of England, to the humble dwelling of the cottager, defective drainage arrangements are even now, in this era of applied science, and after numerous legislative attempts to enforce improvements, only too common. It was consequent upon defective drainage that the Prince Consort, in 1861, caught the deadly contagion to which he succumbed; and ten years after his eldest son narrowly escaped the hands of death from a disease of a similar origin. Still later, illnesses of other members of the Royal family have been traced to the same cause. The scourge known as the "Black Plague," which has at various periods of history swept over Europe and Asia, almost decimating the population of vast cities, owes its origin to some extent to defective means of removal of the waste matters of human communities. The drains of a house are tributary channels to those human organs which separate waste matters from the human system. If these organs fail in their work, the health becomes rapidly impaired. If the closets and drains of our houses fail, from inherent imperfections, to remove or carry away refuse and waste matters to some position where their deleterious properties can be neutralised or destroyed by nature or by art, serious danger to health will be the inevitable result.

Nature has provided a means by which the organic waste matters, or those arising from our bodies, are rendered not only harmless to health, but useful to man. Indeed, one of the most sublime and economical of the laws of Nature is that relating to the absorption of animal waste materials by the vegetable world. The nitrogeneous elements which form the principal constituent of animal waste, if placed at the roots of plants, are absorbed by them, and aid in building up their structure. How simple and economical is this law of Nature that the waste from the animal world is useful to the plant creation. The flagrant, careless, or ignorant violation of this law is perilous. For if our refuse matters are not removed to some position where they can be rendered harmless by atmospheric oxidation, or useful by being placed as manure to the roots of vegetation, they become decomposed, and liberate gases of injurious character. The gases from the decomposed stagnant organic wastes or sewage are not of such an offensive odour as are those from fresh sewage; but the former have a fœtid smell, and when this is perceptible, then danger to health exists. The more highly offensive odours emanating from the fresh sewage of healthy humanity are not in themselves dangerous to health. Nature, by rendering obnoxious to the sense of smell the odours from organic sewage, has contrived forcibly to impress upon animals the necessity for a proper and immediate removal of their wastes; and this natural impression or instinct, which is truly one of self-preservation, is particularly noticeable in the lower animals. The most primitive form of drain construction, and one which is even now only too commonly used, is

that known as the "rubble" drain; consisting simply of the use of stone flags, with joints of clay to form the bottom; the sides of the drain being built of rough rubble or uncoursed stones, covered in turn with stone flags often very imperfectly jointed.

The house inlet to the drains is often fixed in the cellar or basement, and is usually formed of an iron grid or a perforated dished stone, covering the drain, which at this point is occasionally made rather deeper, and an attempt, more or less imperfect, made to form a trap. Very rarely is the bottom of the drain made to slope, or fall in the direction of the main sewer or cesspool. The slope is often, indeed, made for some distance to fall towards the house. In this part of the drain the sewage must always be of a considerable depth before it can flow off, thus forming an elongated cesspool filled with a stagnant and noxious deposit. The absence of flow soon produces such an accumulation of sewage that the drains become entirely choked. Through the imperfectly-formed joints the sewage and its gases percolate and escape, until the whole of the subsoil and foundations of the house become saturated. This saturation produces subsidence of the drain, and its joints gape wider still, allowing all the sewage to escape. If there is a spring or running stream, or if the subsoil is porous, the sewage pollutes the neighbouring soil for a considerable distance, and also possibly the water of some neighbouring well or spring, and thus by one single defective drain a serious danger to a whole neighbourhood may be created.

Before the Public Health Act of 1848 came into operation, most of the drains of our large towns were formed either of the "rubble" construction just described, or on what is known as the "barrel drain" system—almost as imperfect as the former. Instead of bricks, with sides radiated so as to form close joints with each other, square bricks are used in the barrel drain. A little consideration will show that if square bricks are placed together so as to form a circle, they will only come in contact at one corner; the rest of the joints will be very imperfect, and will allow the sewage to escape into the subsoil. Although this system of constructing barrel drains with square bricks is so transparently imperfect, yet in nine cases out of ten, existing barrel drains have been thus built. In country houses, the drains generally lead the sewage to a cesspool. If cesspools are properly constructed, efficiently ventilated, often and regularly emptied, and fixed in some position where the sewer gases emanating from them cannot contaminate the surrounding atmosphere, they are comparatively harmless; but if these important conditions of safety are absent, they may become the source of disease. Too commonly, cesspools are simply built of loosely-walled and badly-jointed bricks, through which the sewage percolates as fast as it enters the cesspool. Cesspools have been allowed to empty their own contents in this manner into the surrounding soil for years, until some epidemic of fever has compelled the authorities to remove or reconstruct them. As evidence of the disastrous effect of badly-constructed cesspools, and of the advantage gained by even a slight improvement, it is only necessary to state that, according to Dr. Pettenkoffer, of Munich, the mere cementing of the sides and bottoms of the imperfect cesspools in and around Munich has resulted in a decrease of deaths in the population of that city from typhoid or enteric fever alone, equal to 30 per cent. Dr. Pettenkoffer has published results, which show in a striking manner that the impurities given off by the old accumulations in cesspools have a dangerous effect upon the air of a town; and these results were abundantly proved by the decreased mortality of the population of Munich, when the cesspools of that town were abolished in favour of a well-designed system of sewerage. A cesspool to be properly constructed should be built on a solid and impervious foundation, formed of Portland cement and concrete, a layer of which latter substance should entirely surround the brickwork forming the sides of the cesspool.

The bricks for the latter should be hard (the quality known as *blue brick* is the best), and if the cesspool is circular in plan, the bricks should have radiating sides, so as to form close joints, which should be well cemented. The inside of the cesspool should also be entirely lined with Portland cement. The sides should be built up to a height of at least six or eight inches above the ground, so that the rain or any other surface water cannot enter and fill it to overflowing. The cesspool may be covered with hard brickwork or stone slabs. Numerous apertures should be left in the cover to allow of free ventilation. Cesspools should also be pumped out or otherwise emptied at short and regular periods.

POISONING BY COAL-GAS.

In connection with the recent Hygienic Exhibition at Berlin popular lectures were given from time to time by various eminent men upon important matters of public health. One of the last so delivered was by Professor Pettenkofer, who chose for his subject coal-gas poisoning. After pointing out that the products of the burning gas were no [more noxious than the exhalations of human beings, and that really gas illumination did not consume so much oxygen as an equivalent number of wax candles would do, he passed to his main thesis, which was the poisonous action of the gas itself. The escape of gas in a house can be readily and at once detected by its peculiar odour, but it is otherwise when the escape takes place in the ground from breakage of the mains, whence it finds its way into the basements of houses. The evil effects of such escape had been exemplified in Italy, in Cologne, and Breslau, and he believed that such cases were far more frequent than is supposed. The poisonous property of coal-gas depends upon its containing carbonic oxide (viz., 10 per cent.), the other constituents, although irrespirable, not acting as direct poisons. From Grube's researches it is evident that the danger of this gas depends not so much upon long exposure to a mixture of air and carbonic oxide, as upon the amount of the latter contained in the air. Air containing a proportion of 5 parts of carbonic oxide in 10,000 can be breathed for hours and even days by men and animals without any injury to health; whilst a proportion of 7 or 8 in 10,000 causes appreciable discomfort; of 20 in 10,000 difficulty of breathing, weakness, and uncertainty in gait; twice that proportion leads to stupefaction, and higher proportions to extreme and fatal effects, referable to the nervous

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

system. The occurrence of cases of illness directly attributed to the entrance of gas into houses from the mains has been found to increase in the winter months, a fact partly explained by the more frequent breakage of the pipes in that season, and also perhaps by the closing of windows and artificial heating of rooms, inviting the accumulation and entrance of the gas from without. Gas thus filtered through the soil may be quite odourless, at any rate until it has collected in large amount; and herein lies the danger to the dwellers in the basement of a house. On the earliest occurrence of symptoms such as headache, the windows should be thrown open, and if on their closure the symptoms reappear, it may be suspected that there is an escape of gas near the house. The mains should be examined and the defects repaired without delay; but Professor Pettenkofer urged that it would be well that the police should warn all the inhabitants of houses in the vicinity to see that their rooms were kept thoroughly ventilated. For when the gas remains in the soil it may again find its way into houses when the rooms are artificially heated in the cold season. In conclusion, he remarked that he had chosen this subject for his lecture to show how important it was in hygienic inquiry to pay attention to minutiæ; and he urged that every university should have attached to it a hygienic institute, such as Munich and Leipsic possessed, and as Göttingen was about to have.—*Lancet.*

To Keep Leeches.—It has lately been recommended to keep leeches in water in which one-thousandth part of salicylic acid has been dissolved, and to renew this water every three weeks. The leeches are said to keep well in this manner, and to retain their full suction power.

Novel Method of Dust Collection.—The National Society proposes a method of rendering our London atmosphere less unsavoury—a most important matter, especially during the summer months, when there is scarcely a street in London free from the sickly smell of decay. The part of the householder is to burn the vegetable refuse, which can easily be done without smell by first drying it daily under the kitchen fire, and deposit the incombustible dust in metal pails. The part of the vestries is to collect compulsorily from every house weekly—why not twice weekly? The cost of collection—an important consideration—would be greatly diminished by the universal use of the metal pails. The accumulation at the bottom of an enclosed dustbin is not pleasant to contemplate.

Poisonous Wood.—The use of a wood from Panama, called cokobola, in the manufacturing interests in Bridgeport, is attracting the attention of the Connecticut State Board of Health. The wood is cheap, takes a brilliant polish, is easily worked, and is used extensively for knife-handles and ornamentation. Workers in the material are poisoned, somewhat after the manner of sumac, although some are free from any effect. Swelling of the face, closing of the eyes, appearances of being burned on the hands are the usual symptoms. Some are attacked with distress in the stomach, with loss of appetite. One person who was a confirmed smoker, after being poisoned, has been unable to smoke, or even stay in a room where there is any tobacco smoke. Children playing in the sawdust of this wood, which had been dumped, were badly poisoned about their feet. At a large factory on Elm-street, where this wood is extensively worked, chickens in the adjoining yards are said to have all died from eating the dust that settles on the grass.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

PART I.

By D. A. Sargent.

(*From the "North American Review."*)

To those who are familiar with the subject, it has long been evident that there exists in the public mind a widespread misapprehension as to the amount and the system of physical training in American colleges. The tone of current newspaper comment—often humorously intended, to be sure—is nevertheless misleading to readers whom it unconsciously influences. Athletics, gymnastics, and aquatics are not the chief subjects of college instruction, as certain editors would have us believe, and as a certain proportion of otherwise intelligent people seem really to suppose. And in the present article we desire, as briefly as possible, to correct this mistaken notion, and to call the attention of educators to the urgent need of some system of physical exercise in our higher institutions of learning.

During the past few years the science of physiology and hygiene has made rapid advancement. The elementary laws of health have been more widely diffused and more intelligently followed by the people at large. The medical profession are trusting less to drugs and more to natural agents. Air, food, sleep, and exercise, when properly administered, are great remedies as well as great preventives of disease, and doctor and patient alike begin to realise this fact. Our houses are better ventilated, our tables more healthfully provided, our time for sleep is lengthened, outdoor games are growing popular, and our styles of dress have been perceptibly modified in favour of health and comfort. The spirit of the age is recognised by the governing bodies of our colleges and seminaries, who announce in the catalogues of their institutions that due attention is given to health and physical training. Parents are attracted by these announcements, and send their sons and daughters to college in the confident hope that they will receive physical as well as mental training and development. But their expectations are seldom realised. The intelligent system of physical culture which they had been led to expect exists only in the imaginations of the trustees and faculty.

It is true that nearly all of the larger seminaries and colleges in the New England and Middle States are provided with gymnasiums, or their students have access to some place for practising physical exercises. In a few of these institutions light gymnastics are made a part of the curriculum, and are conducted under the eye of a capable instructor. The apparatus used consists of wooden dumb-bells, wooden wands, and Indian clubs, which vary in weight from one to four pounds each. The movements are arranged in a progressive series, and are designed to call into gentle activity all the muscles of the body. The time allotted to these exercises varies from one hour to two hours a week, and extends over a period of from three to

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

eight months. In some cases regular attendance is required for the first year only, in others it is kept up throughout the school or college course. The maximum of required gymnasium work in any institution is not over two hours a week, and in one instance it is but one hour a week for a single term. No one acquainted with the structure of the human frame, or knowing anything of its natural requirements, will undertake to say that a half-hour four times a week devoted to muscular exercise is excessive, especially when the apparatus used is of the lightest description. Yet this is all that is provided in the way of physical culture by the corporation in the best of our literary institutions.

Now, what does the student do for himself? This depends partly upon his temperament and disposition, and partly upon his surroundings. If he is strong and robust, overflowing with life and vigour, he takes naturally to outdoor sports; if he is of a studious turn of mind, or of a phlegmatic or melancholic temperament, he is less inclined to active exercise and falls more readily into sedentary habits. These inherited tendencies are sufficiently strong, we think, to warrant us in grouping college students in four great classes:—(1), The athletes; (2), the sporting men; (3), the scholars; (4), the idlers.

The class of athletes is made up of those who give most of their time and energy to boating, base-ball, foot-ball, and general gymnastics. Those who take part in these sports are chosen on account of their peculiar fitness for the position to be filled. A candidate for the university crew must possess at the outset a large and vigorous frame, must be especially strong in the back, loins, and legs, and have great powers of endurance. These qualifications, we say must be possessed at the outset, or a man cannot hope for a place in a college or a class crew, and outside these crews very little rowing is done by individual students. The improvement in the art of rowing has shut out the majority from participation in this sport. If they own boats, well and good; they can row when they like, and as long as they like; but, unfortunately, this luxury can be enjoyed only by the few. Moreover, other obstacles, such as rough water, rainy weather, low tides, obstructions in the river, and its distance from college, combine to render this sport impracticable and unreliable as the sole agent in any system of physical culture. Even where every provision is made to render this exercise accessible and attractive, but a very small percentage of the students avail themselves of it. At Harvard, Yale, Columbia, and Cornell, less than five per cent. of the students row regularly; and in the smaller colleges we find that, unless a regatta is anticipated, the boat-house is hardly opened at all. A few years ago several of these smaller institutions sent representative crews to Springfield and Saratoga. The money raised to defray the expenses of these crews was subscribed under the pretence of awakening a general interest in boating, whereas it benefited only those who underwent the three months' training, and was of personal interest only to those whose physique insured them a place in the next year's crew. And when we look over the ground to-day we find that the only men who are enjoying the advantages of boating are the men who do not need them.

These remarks in regard to the boating men are almost equally true of the ball-players. The game has been reduced to a science, and only one who possesses the necessary skill and experience can hope to belong to the nine. In most cases this skill is acquired long before entering college, and the tendency thenceforward is to develop to the extreme the abilities that have already displayed themselves. To maintain the standard of excellence now required of college players necessitates from two to three hours' practice daily in the field and a winter's work in the gymnasium. This is more time than is needed to keep the body in good working condition, and more than the mass of students can spare. Hence, to the majority the advantages of base-ball are practically denied. Only eighteen men can play at a time, and two regular nines are all that the largest of our colleges maintain. The game, therefore, is limited to a class of experts, and only those who are members of the nine get the benefit of systematic training.

A Man Without Hands and Feet.—The Geneva correspondent of the *Times* records the death of Jean Trottet, a man who, by dint of sheer courage and energy, overcame almost insuperable difficulties, and showed that life, even when it seems almost a curse, may be well worth living. The man in question was born in 1831, at Arare, in the canton of Geneva, without hands and without feet. His short arms were pointed; and his legs, such as they were, not being available for progression, he was able to move only by twisting his body from side to side. His case greatly interested the surgeons of the neighbourhood, and local Barnums made the parents—well-to-do peasants—many tempting offers to turn their child's misfortune to account by exhibiting him about the country. But these offers were invariably declined, and when Jean was old enough, he was sent to school. In writing, he held his pen at the bend of the elbow; and, as he grew older, he took great interest in husbandry, became an active haymaker, used the reins with dexterity, and was so good a shot, that he often carried off the first prize at the village *tirs*. He enjoyed, too, some reputation for sagacity, was consulted by his neighbours on matters of importance, and has left a widow and four children amply provided for.

Antiseptics and Volatile Products of Decay.—An investigation of antiseptic substances has led M. Le Bon to the following interesting conclusions, which we translate from the *Polytechnisches Notisblatt*:—1. The disinfecting power of an antiseptic is weaker the further decomposition has advanced. 2. The most energetic of the disinfectants are permanganate of potash, chloride of lime acidulated with acetic acid, sulphate of iron, carbolic acid, and the glyceroborates of soda and potash. 3. There is no connection between the disinfectant power of an antiseptic and its effect on microbes. 4. Neither is there any connection between the power which prevents decay from setting in and that which checks or stops it when it has once begun. 5. Antiseptic substances in general exert but a slight effect on bacteria; an exception is found in those substances, like corrosive sublimate, which are violent poisons. 6. The poisonous action of a decaying body has no relation to the poisonous qualities of the volatile alkaloids evolved from the decaying substance. 7. These volatile alkaloids, which form only during advanced stages of decay, are very violent poisons, resembling prussic acid and coniine in toxic effect, showing how injurious the air from graveyards may be under certain circumstances, even when there are few, if any, microbes present.—*Scientific American*, April 28, 1883.

Perfect Daylight.—Chappuis' reflectors supersede gas in daytime and improve natural daylight. They can be adapted to any window, fanlight, skylight, area light, &c., wherever natural light is impeded owing to the bad construction of premises or the proximity of walls or buildings. They will be found to promote health, comfort, and economy. They can also be used as screens or blinds, and at the same time they act as daylight diffusers. More than 30,000 are in use in London alone. For prospectuses address two stamps to (H.) Chappuis, patentee and manufacturer, 69, Fleet-street.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

Artificial Cork.—A German patent (23,765, Feb. 6th, 1883) granted to Grünzweig and Hartman, in Ludwigshafen on the Rhine, covers a process of making artificial cork by thoroughly incorporating 63 parts of ground or powdered cork chips with 180 parts of boiling starch-paste. The resulting plastic mass is pressed into forms, and after removal from the latter, dried in hot rooms.

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Watercress.—At the June meeting of the Therapeutical Society in Paris, one of its members, M. C. Paul, in discussing the merits of the above crucifer, said he was of opinion that its antiscorbutic and various other virtues were over-extolled. Looking at its chemical composition, an essential oil composed of sulphur-sulpho-cyanogen with a hydro-carbonised radicle—allyle—which gives rise to eructations hours after eating it, its bitter extract, its iodine, iron and phosphates; he said that each of its component parts taken separately is in itself intolerable to most stomachs. He admitted that the iron, iodine, and phosphates would indicate its use in scrofulous or scorbutic cases, but suggested that other vegetables have this merit without the drawback of being trying to delicate stomachs. If eaten at all, he recommended that only the young shoots and leaves should be taken, the ligneous parts and stem of the plant being discarded. He cited the following instance to prove that it takes a longer time to digest than other articles of food. "A Geneva doctor had a patient who could be sick at will. The doctor took advantage of this peculiarity. He made his patient bring up the contents of his stomach, sometimes one hour, sometimes two hours after meals — in fact, when he liked. Upon examining the process of digestion, the watercress was always amongst the last thing to be digested, taking the same position, as regards time of digestion, as hard-boiled eggs." M. Paul concluded his remarks by inviting some one else present to express his opinion on the subject. Whereupon M. Noel Gueneau de Mussy rose and said that he believed cress to possess real therapeutic effects, especially in cutaneous diseases. He well remembered a striking case of a lady who had been to every physician in Paris to obtain relief for eczema, from which she suffered so severely that her nails actually fell off, her tongue also was covered with patches of eczema; she had been in this deplorable condition for fifteen years. After ineffectually trying all the armamenta of the Pharmacopœia, he at last in despair prescribed this plant to be eaten three times a day. In six months she was almost cured, and this was not an isolated case. He advocated its being cooked and eaten like spinach, which would make it more digestible. The juice was an excellent medicine, but it ought to be made at home by squeezing the plant in a press, after having first washed it very carefully in much water; he insisted on this, as the spawn of toad was sometimes deposited in the leaf. M. Campardu now followed in the discussion, and spoke favourably of its medicinal properties. M. Paul observed that diabetics derived benefit from taking it, and he had successfully prescribed in many such cases.

High Heels.—Since the high heel made its appearance, medical men have more than once borne witness to its bad effects. The late Mr. Hilton condemned it. Others have done the same. Of late years public opinion has done away with certain of the long-established extravagancies of dress, and has given rise to methods more agreeable to the symmetrical development of the body. We hope that in the process of reform, the feet, in which too often vanity pays a price which is dangerously expensive, will not escape notice. The evils of the high-heeled boot or shoe are due to the fact that it is an essentially badly-fitting article. It is made in defiance of the relation which it ought to bear to the anatomy of the foot, and to the direction in which the pressure of the body weight falls upon the latter. Hence the peculiarly cramped walk of ladies of the present day. Anyone may observe the consequences of the "advanced position," nearly under the instep, and the increased height, of heel, in the substitution of a forward inclination of the body, and a trip suggestive in a measure of the stumbling gait, for the upright carriage and the free and graceful swinging movement natural to the leg in walking. These matters, as far as they are merely relative to deportment, do not strictly concern us, but there are attendant circumstances which deserve comment. The boot or shoe, in order that it may not shift on the foot which has lost much of its usual purchase of direct downward pressure, must hold it firmly, and even tightly, and in particular it is necessarily constructed so as to hold with undue firmness just above the back of the heel. With some persons perhaps no inconvenience results, with others who have fine skins chafing is readily produced. This is in itself a trifle, and is presumably altogether too inconsiderable to affect the will of fashion, but it may nevertheless be the slight beginning of graver troubles. Probably there is no practitioner fairly long acquainted with town practice who cannot recall a case or cases in which extensive inflammation of the leg with abscess formation has followed even such a slight abrasion, and the exciting cause when looked for was discovered in the patient's shoe. There have even been instances, fortunately rare, but still occasional, where abscesses arising round some neglected trifle of this kind have ended fatally. These are facts which cannot be denied, and should not be overlooked; but even if they could, is there any woman with a mind of her own who will say that the dainty step so much desired by some, bought as it is at the cost of healthy muscular exercise, is not overvalued? We rather hope that the honest feeling and the sound judgment which have guided that sex in many better purposes, will ultimately overcome the false sentiment which now leads certain of its members to support an unbecoming and injurious custom.—*Lancet.*

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

MEDICAL NURSING.

Lectures on Medical Nursing. Delivered in the Royal Infirmary, Glasgow. By J. Wallace Anderson, M.D., &c. (Glasgow: James Maclehose & Sons.) 1883.

The status and position of the modern nurse are widely different from those enjoyed by her predecessor of even a few years ago. The nurse of old was merely an untrained servant, who, by rule of thumb, continued to discharge

certain duties, and as often as not attained a certain perfection in her calling through the media of many errors and mistakes. To-day the nurse is, firstly, a trained woman. She is often a gentlewoman, educated and refined. She undergoes a special education in the essentials of physiology and anatomy, and she is further instructed in the *technique* of her profession—not merely by practice in the hospital ward, but also through regular systematic instruction given to her class by the physicians and surgeons of the infirmary. "Nursing" is thus emphatically a profession of to-day. It is that branch of medical practice which seconds and aids in the most important fashion the work of the physician and surgeon. The trained nurse is a skilled observer. She reports day by day, or hour by hour, to the doctor the progress of the case. She can take a patient's temperature, bandage a wound, renew a dressing if need be, and she can cook for her patient if required. The woman who is a skilled nurse is really a highly-trained lady. She is a person possessing an acute organisation, her senses are trained to accurate observation, she is kind, yet firm withal, and she is not afraid to encounter with calmness any disaster of human life in which her aid is required. Truly, of all professions, this one of the "nurse" is that which most demands the patient, quiet industry, self-abnegation, and skill that constitute the highest qualities of the human mind.

Dr. Anderson's volume contains ten lectures on "Medical Nursing," and a useful appendix on "Invalid Cookery" and other details. He begins, wisely enough, by detailing the history of modern nursing, and shows how the nurse owes a duty to doctor and to patient, and how observation, accurate and exact, must form the basis of her education. The history of the rise and progress of nursing as a profession is given in an interesting manner by our author:—

The work done by a few German ladies amongst the wounded in the disastrous battles of Prussia with the first Napoleon led, years afterwards, to the foundation of the systematic nursing of the sick in Germany. We find, too, that a visit to the field of Waterloo, in 1816, forced upon the poet Southey the conviction that some attention should be devoted to hospitals, *as well as to poorhouses*, and in 1829 he was in correspondence with Mrs. Fry and others, not about prisons now alone, but regarding the internal management of hospitals. But little came of that and other similar projects, and we must go out of our own country to find the real beginning of the systematic training of nurses.

It dates from 1836, when Theodore Fliedner, the pastor of a small Protestant congregation at Kaiserswerth, on the Rhine, established in that little German village what he called the Deaconess Institution. There, under the superintendence of himself and his wife, a training school for female nurses was begun. It was carried on from the first in a markedly devotional spirit, and was based on the principle of the Deaconess Institutions of the Early Church.* Fliedner's Institution was therefore quite a religious community, but with no vows, as the founder always said: the only bond of union being the Word of God. It still flourishes, along with many others on the Continent which have followed in its path, and has been the training school of many a leader of the work in our own country. Pastor Fliedner died in 1864. I think there can be no doubt he is entitled to be considered the founder of modern nursing.

War again gave the next, and in the case of our own country, the first great impulse to the proper care of the sick. Every one has read about, or knows something of the sufferings of our soldiers in the Crimea. It was not that more than 3,000 men died from wounds received in action—this is looked upon as the inevitable result of war—but that six times that number should have died of other diseases, largely preventable, which was felt to be a national disgrace. And when a lady was found who was able to meet and successfully grapple with the emergency, every one looked to her, and thought of what she had done, with quite a personal interest. On October 21, 1854, Miss Nightingale left England for the Crimea, with a staff of thirty-seven nurses, and within two years she was back again, having won the gratitude and admiration of the whole army. Her name was a household word in every soldier's home, and soon also in every home in the land. So it was that, in our own country, universal attention came to be directed to the proper care of the sick.

In Willis's Rooms, London, on November 29, 1855, a great meeting was held to arrange about a form of testimonial to Miss Nightingale which should be truly national in its character. It resulted before long in a large sum of money being collected, which was called "The Nightingale Fund." This Miss Nightingale refused to accept for herself, but suggested that it should be placed in the hands of Trustees for an object she had greatly at heart, and which she would herself supervise—the training of nurses. This being done, arrangements were at last made between the Nightingale Fund Committee, and the Treasurer and Governors of St. Thomas's Hospital, and on June 9, 1860, Miss Nightingale's Training School was opened in that hospital with eight probationers.

This leads me to say a word or two of one whose name, well known as it is, is not so widely known in the north here as it deserves to be—I mean Mrs. Wardroper, the matron of St. Thomas's Hospital. Before the Crimean War had made sick-nursing a subject of common remark, Mrs. Wardroper's attention had been directed to the general character and position of the hospital nurse, as not at all befitting the nature and requirements of such an important calling. That lady recognised that a nurse must be trained; that the care of the sick was a higher duty, was a more important and more responsible work than could be done by those who were expected to perform, in addition, many menial duties. After many endeavours to improve generally the nurse's position in hospital, and have her work confined exclusively to attendance on the patients, Mrs. Wardroper was allowed to put her ideas into practice, and what is known as "The New System" of nursing was introduced into St. Thomas's Hospital in 1858. It very soon proved a success. Miss Nightingale recognised this when, in 1860, she selected St. Thomas's as her training school.

Throughout his instructions, Dr. Anderson is always practical and clear. His second lecture on Temperature and the Pulse is a model of plain reasoning; while in the third and fourth lectures such topics as Cough, Ventilation, Food, Digestion, &c., are lucidly treated, and much information of the highest value to the nurse is thus imparted. The general details of medical and surgical practice are duly noticed, and each point of interest in the duties of the nurse is duly expounded. The directions for the use of fomentations show how an apparently simple topic deserves the close attention of the nurse:—

A fomentation is a local application of hot water by means of flannel, in such a form that *warmth* and *moisture* are combined and sustained. It is employed chiefly to lessen inflammation, allay pain, or relieve spasm. You require boiling water, flannel (preferably coarse flannel), and waterproof or macintosh. Oiled silk does not make a good substitute for the last. You prepare a fomentation in the following way:—

Spread out a towel in an empty basin, and on that lay a flannel folded eight times or so, and to the size you wish it. Then pour boiling water upon it, and wring it in the towel as dry as you possibly can. Keep it in the towel till you are ready to apply it to the patient, and just before doing so, shake it gently for a second or two to allow the admission of a little air between the folds of the flannel. Having applied it, place a piece of macintosh over it of such size that the latter will completely overlap the flannel by at least an inch on all sides. See that the whole is kept closely in position by means of a bandage or such like. If you are careful to follow these instructions, a fomentation will continue hot for many hours; but if, for example, the macintosh should not completely overlap the flannel, should even a corner of the latter be exposed, evaporation will take place at that point, and the fomentation will become cold, clammy, and worse than useless. If properly applied, however, it will continue hot, as I have said, for many hours; but in most cases you will be directed to change it every hour or so.

Never omit to shake the fomentation in the way I mentioned, so as to separate the folds of the flannel somewhat. It is a point

* There is good reason to believe that in the Apostolic Church such a community existed, and that Dorcas, Priscilla, Phœbe, and many others were members of such a society. Phœbe is expressly called a "deaconess" (*diakonos*, in Greek)—a *minister* or *servant* of the church (Rom. xvi. 1). It was probably a part of their duty to visit and attend the sick.

seldom referred to, and far too little known. The fomentation will not be materially cooled by so doing, while by being made less compact or solid, or, in other words, by having a freer admixture of air, which is a bad conductor of heat, the heat will be retained by the fomentation for a much longer time. Coarse flannel is preferable for the same reason; there is more air in its interstices.

On changing a fomentation, wipe the skin dry and immediately apply the next.

To relieve spasm, or act more as a counter-irritant, one or two teaspoonfuls of oil of turpentine are often added to the fomentation. It should be quickly sprinkled over the flannel just before the fomentation is applied. It is of great service in an attack of colic. To relieve pain more effectually, a teaspoonful of laudanum many be added in the same way.

The administration of medicines is, of course, an all-important part of a nurse's duty, and Dr. Anderson does not fail to lay stress on the advisability of punctuality and accuracy in the discharge of this function. His advice may well be borne in mind by all who have the care of the sick, whether professed nurses or not.

In hospitals you require a routine as to the giving of medicine' but in private nursing you should have some simple scheme for your guidance in cases in which the precise hours are not indicated. For example, suppose a medicine is ordered to be given every four hours, night and day, you could arrange the hours thus—2, 6, 10 a.m., and 2, 6, 10 p.m. If four times a day you could say 8 a.m. and 12 noon, and 4 and 8 p.m.; or three times a day—9 a.m., 2 p.m., and bedtime. The patient's meals, as I have said, often determine when medicine is to be given. Stomach tonics are usually given before meals. Blood tonics, as they are called, are usually given during digestion; and so also some medicines which are not easily borne by the stomach except after food—for example, arsenic, and, in many cases, iron.

Accuracy, not only as regards time of administration, but as to the quantity administered, is most essential. Unfortunately the common system of ordering fluid quantities is both inaccurate and misleading. By a tablespoonful for a dose was originally meant half an ounce fluid measure. But the difference of opinion as to when a tablespoon is full may represent fifty or a hundred drops, and, after all, tablespoons are of very different sizes. The modern table, dessert, and teaspoons hold about twice the quantity that their old-fashioned namesakes do, and it is the latter that are meant by the prescriber. Nor is it more accurate to say so many drops. Drops differ in size according to the consistence of the fluid, the shape of the lip of the bottle, and other conditions. It is therefore much better, much safer, always to employ the standard measures, and the table of these you should know by heart. It is obviously inaccurate to understand by a teaspoonful one drachm if a modern teaspoon can with care be made to hold two drachms; or to suppose that a dessertspoonful is equal to two drachms, and a tablespoonful to four drachms or half a fluid ounce, if they can be made to hold double their respective supposed equivalents. This is being felt, and consequently the use of standard measuring-glasses is becoming more common; and one of the first things all of you should know is how to measure by the ordinary two-ounce and two-drachm measures. The former answers well down to quantities of three, or even two drachms, but drachm and minim doses should invariably be measured by the latter. It amounts to this, then: if you are told to give half-an-ounce so many times a day, you measure a half-ounce accordingly; if a tablespoonful, you should measure a half-ounce all the same. If you have no measure, all you can do is to make it a small tablespoonful; in the case of a drachm, a small teaspoonful.

Never give any part of a mixture without first looking at the label. I would ask you all to teach yourselves that habit: it may prevent many a serious error.

It will do no harm to acquire the habit of giving all mixtures a slight shake before using them, and when pouring them out to keep the labelled side of the bottle up, which will prevent the directions from being blotted with drops of the mixture.

With the precepts of this book committed to mind and practised, the nurse need not fear any test of her skill or powers which may be encountered. It is a valuable text-book, and something more besides; for Dr. Anderson writes in a spirit of true friendship for the noble profession he is dealing with, and his words are always those of encouragement and sympathy for the nurse in all her difficulties and trials.

Sanitary Appliances, Etc.

THE ZANDER INSTITUTE.

Speaking of the treatment of rheumatism at Aix-les-Bains, Professor Granger Stewart says (*Edinburgh Clinical and Pathological Journal*) :—"The other suggestion strikes me as being of considerable importance, and I should desire to see it acted upon as soon as possible. It is, that an establishment, on the model of that originally introduced at Stockholm, by Dr. Zander, should be founded in Aix. Early in the present century, Ling drew attention to the value of passive movement and frictions in the treatment of many diseases. He distinguished two classes of movements—the active and the passive. In the former, the patient used his muscles and moved his joints in opposition to the resistance made by a carefully-trained attendant, or the patient himself resisted movements which the attendant made. In the latter were included the manipulation, friction, and kneading of skin and muscles, which are at present grouped under the name of *massage*, and have proved so useful in the hands of Weir Mitchell, Playfair, and others. From what I have said, you will perceive that the advantages of Ling's method are to be fully enjoyed in Aix. No attendants could be found in the world more skilled in massage, or in the performance of passive movements of the joints, than those attached to the establishment in Aix. But Dr. Zander made a distinct advance upon the old methods, when he invented a series of appliances by means of which any joint may be moved, any group of muscles brought into play, and any part of the body manipulated with the most perfect accuracy. He recognised the fact that it takes long training to produce a skilled manipulator, and that the best manipulator gets tired when he has to work at patient after patient for hours together.

"When you come to treat rheumatic and post-rheumatic conditions, you will find that there are two elements with which you have chiefly to deal. There is, first, the stiffness of the joint and the thickening of the fibrous tissues around it; and, secondly, the enfeeblement of the muscles which have been disused in consequence of the joint affection. Now, I find that Zander's machines are capable, on the one hand, of producing passive movements of the joints, and on the other, of developing and cultivating the power in muscles, aiding the feeble effort of which the muscle is capable, and thereby gradually restoring its strength.

"In Stockholm Zander's Institution is resorted to by immense numbers of people, and the admirably-equipped gymnasium which was lately established in Soho-square, London, is attaining to great popularity. It is likely, in my judgment, to be the first of many institutions of the kind which will be established throughout the country. Were the authorities in Aix-les-Bains to found and develop this Swedish system of treatment, I have no doubt that the results obtained in this great health resort would be even more satisfactory than they have hitherto been. I do not suggest that the present system of bathing and manipulation should be in any degree superseded, but only that the gymnastic exercises should be added to the other means of treatment. I believe that in the cases which are enjoying the advantage of the thermal treatment at Aix the results of the gymnasium would be far more satisfactory than they are under ordinary conditions. I hope to see the day when, not at Aix-les-Bains alone, but at Aix-la-Chapelle, at Vichy, at Carlsbad, at Buxton, at Droitwich, at Harrogate, at Strathpeffer, and at Bath—which last is happily again coming into favour, as it well deserves—there shall be Zander Institutions as adjuncts to the curative agencies so liberally supplied by nature."

MESSRS. FIELDING'S CHRISTMAS PRESENTS.

The æsthetics of life form a complementary power in the maintenance of health, since pleasant surroundings and the culture of the beautiful together tend to make life move easily along its accustomed and normal paths. Of the varied kinds of presents which "the festive season" brings into the market, we have seen few which can rival the jewellery of Messrs. Fielding Brothers, of 42, Lombard-street, London. Their gold and silver ornaments are marvels of cheapness and elegance. The designs are neat and ornate, and the workmanship solid and lasting. The articles Messrs. Fielding offer at low prices, commensurate with the workmanship, comprise bracelets, brooches, necklets, and lockets. The silver locket, at 8s. 6d., and the neat little brooch, at 3s., are marvels of neatness and chaste workmanship. Among the Christmas presents which are certain to attract notice, Messrs. Fielding's presents should command attention.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

B. Cargill.—The grey matter of the cerebrum, or true brain, exists on the outer surface; the white matter is internal. The positions are reversed in the spinal cord.

Interested.—Parkes' "Hygiene" (sixth edition) is the most comprehensive book.

Austin.—About 60 deg. F.

A Father.—Cleland's "Animal Physiology," or Wilson's "Standard Physiology" (Chambers), should suit you.

Diogenes.—Dr. Pratt's "Sermon to Young Men" is published by Baillière, Tindall, & Cox, London. See our publishers' column.

Anna W.—There are objections to that course, of legal nature. Why not see your landlord on the subject?

G. Ellis.—See our papers on "How to Get Thin or Fat."

O. X. Y.—Mr. Browning, 63, Strand, sells a lantern which should suit you, and which is well-adapted for lime-light views.

A. C. B.—No; the topic is not adapted for our pages.

Lectures.—Address Mr. Flack, 74, Great Queen-street, W.C., who will afford all information regarding Dr. Wilson's lectures.

Ninon.—We think the system will benefit you, but you should be careful not to overdo your mental work.

SANITARY.

Oxley.—The Edinburgh Sewer Trap (29, Upper Priory, Birmingham) appears to us to be one well adapted for your special purpose.

J. Aitkin.—See our papers in early parts of Health on "Disinfectants."

Occupied.—We believe you cannot be compelled to carry out the repairs. Consult a solicitor.

Theta.—Take no notice of the threat. Your landlord is evidently ignorant of the law.

E. C.—Try "Condy's Fluid" in strong solution.

MEDICAL.

Oreille.—There is possibly some loose wax in the ear. Try the effect of careful syringing with tepid water and soap; previously dropping overnight a little glycerine into the ear. Are you troubled with chronic "cold in the head?" If so, try the inhalations recommended to "W. M. Foot," in Health, No. 34.

A. S. A. W.—You are evidently morbidly hypochondriac. We cannot advise you better than to recommend you to go away for a complete change, or to have your fears removed by consulting a good physician. You are a prey to foolish thoughts, and there is no evidence in your letter that you are in ill-health. Be cheerful, and don't give way to your morbid ideas. Take plenty of fresh air and exercise.

Hopeless.—Take a little Morson's "Pepsine" with your food; live plainly; avoid stimulants, and rest after meals, especially.

Rose.—Give us a fuller account of your life and habits. The waterbrash may be merely a symptom of other troubles, and the difficulty in swallowing should be more fully explained. Give reference to pain, &c.

Dorothy.—Your case is somewhat curious. We do not find in your account any evidence of disease such as that you fear. The decrease in size may have depended on internal causes, as the parts you name are well known to be physiologically associated with other organs. We should recommend you, if the pains become persistent, to see a surgeon; but our opinion at present is that you have no cause for alarm.

E. K. P.—Yes; try the tonic you name for a time. Sleep on a hard mattress, avoid fluids at night and stimulants, and take moderate exercise.

Fatima.—We could not recommend the use of any such medicine. Far better (as shown in the articles) to trust to physiological means, diet, &c. Follow the advice given in the articles.

Query.—1. No evidence of worms. Take a little "Æsculap Water" occasionally in the mornings, and be careful in diet; avoid much vegetable food. 2. What you name as food may suit one individual. There is no one rule for all. You must be guided by individual experience. The dietary you name is not one on which an ordinary man could work hard.

Rostrevor.—1. Take a tonic; or try a little "Pepsine" with food. See that your diet is nourishing. 2. Smith's "Foods" (price 5s.) is published by Kegan Paul & Co., London. It is a good book, and contains full information regarding the scientific aspects of foods. 3. A short walk can do no harm; but hard exercise before breakfast is not to be commended.

Unhappiness.—Your symptoms are those of health under par. Take a teaspoonful of Fellow's "Syrup of the Hypophosphites" in a wineglassful of water thrice daily, before meals, for a time.

L. C. B.—1. Yes; we believe so; complete insensibility to pain can be secured by aid of the "gas." 2. Your question is a difficult one. Individual and personal peculiarities operate here, as elsewhere, to produce different effects. Other things being equal, in a person of robust health it might be more difficult to induce unconsciousness than in a weakly person.

Twins.—Try the effect of a warm bath when the paroxysms come on. Dr. Semple's little book "On the Management and Feeding of Infants" (Kimpton: 82, High Holborn, London) should be read and studied by you. 2. Attend closely to the child's general health. Stammering is often a result of nervousness and ill-health in children. Be careful not to excite him or to scold him; and make him speak (or sing) his words slowly and deliberately. You should have medical advice about the baby.

Still-hoping.—Take the tonic recommended to "Unhappiness" in present number of Health; don't overdo exercise; and read and follow advice given to "E. K. P." above.

Glasgow.—For the pimples take the lime pills ordered to "Thomson" in No. 33 Health. Your "shell-corns" constitute the disease known as *acne*. The sebaceous tubes of the skin get filled up, and the dust gives the "black-heads." Steam the face at night; wash with hot tepid water; press out the plugs, and try the effect of the following lotion, a little of which is to be rubbed into the face at night:—Sulphur, three drachms; glycerine, four drachms; rectified spirits of wine to make up four ounces. The diet should be non-stimulating.

F. W. D.—1. Try the effect of a little "Æsculap Water" taken occasionally in the mornings. 2. The dry hands are only a symptom of your general ill-health. 3. No; we do not preserve letters after reply is given here. 4. Thanks for pamphlet—a thorough quack production. 5. Any druggist will inform you of the price.

A. B. W.—All your symptoms will disappear when you get your system thoroughly toned up. We should advise you to take the tonic recommended to "Unhappiness," in present number; to use injections of "Condy's Fluid" (1 part to 10 or 15 water) for a time as an experiment; to let your diet be generous, but not stimulating; and to rest as much as possible. Let us hear how you are after ten days or so of this treatment. The injections may be stopped if they are of no avail after three or four days' trial, as probably they will not be needed in the latter case.

Kezia.—Be very careful of chills and colds in convalescence from scarlet fever. Don't hurry in getting the child out, and let its food be light and nourishing. Warmth is the sheet anchor of your case, and in this way you will avoid kidney and ear disorders. For the worms we should be inclined to try the effect of a weak salt-and-water injection, or an injection of infusion of quassia. If the thread-worms increase in number the child should be prescribed for by a physician. It is well to bear in mind that the habit of which you spoke in your last may often depend on an irritating condition of the secretion, as well as upon worms; and for the detection of this an examination of the secretion by your doctor will be necessary. Your precautions in the fever were admirable.

Ivens.—You must either give up your tennis or be very moderate therein. We should recommend an elastic bandage, carefully applied, to be worn for a time. Difficult to say anything about cause, as you do not give details of history. There may be a suspicion of rheumatism in the affection.

E. Lewis.—The affection is probably due to digestive disturbance following an irregularity in diet. Care in diet; rest after meals; and the taking of a little Morson's "Pepsine" with the food may relieve you. Give this advice a trial, and let us hear from you again. Substitute cocoa for your tea.

X. Y. Z.—1. Give your friend the tonic recommended to "Unhappiness" in present number of Health, for a time, and report progress in, say, ten days. 2. Bathe your feet frequently in tepid water in which a little alum has been dissolved. Attend strictly to condition of shoes and stockings.

Gala.—Probably a kind of wen. Easily removed by a simple surgical operation, from which no harm could accrue.

New Reader.—See advice given to "E. K. P." above, and take the tonic recommended to "Unhappiness" in present number of Health. Don't be despondent; you will, by attention to our advice, get quite well.

Ægrotat.—Your symptoms are those of indigestion. We should recommend a more generous (but light) dietary, and rest after meals, with a little of Morson's "Pepsine" to be taken with the food. A little "Æsculap Water" occasionally in the morning would also do you good. Be very moderate in exercise for a time. Glad to be of any further service.

Willie.—Your description, "sediment," is too vague for any advice. The question can only be answered by a medical examination of the fluid.

J. C. Coulson.—See and follow advice above given to "Ægrotat." Rest after meals is highly necessary in your case, and also the "Pepsine." Let us hear from you again.

A Sufferer.—Depends entirely on the natute of the stone. Only a medical examination can determine the special waters which should be drunk. If you send us stamped addressed envelope, we can (if desired) put you in the way of obtaining a reliable opinion.

Gaelic.—Unless the occurrence you name occurs too frequently, you need not feel alarmed in any way. If your general health is good, you need not mind the matter at all. See advice to "E. K. P." in present number of Health.

J. Y. P.—Your idea of the weakness "shifting" from one organ to another is (in your case) entirely erroneous. If your digestion has improved, so much the better are you all round. Your symptoms are those of dyspepsia chiefly. Follow advice to "Ægrotat" above, and, above all, don't overdo exercise.

Anxious One.—No need to be alarmed. Follow advice to "E. K. P." in present number, and write again, if not improved. You do not suffer from any disease.

Rectum.—No; nothing directly to do with what you name. Try hot salt hip baths, and rub warm oil into the painful part. Avoid stimulants and clothe warmly. If the pains continue thereafter or get worse, you must see a physician. At present there is no indication, from your account, of anything beyond a slight rheumatic or muscular affection.

No Stone Unturned.—Try the "kola" nut by all means. It has a high reputation. See article on "Sobering Remedies" in No. 30, Health. The "kola" is quite safe, and our article will explain its effect. It is allied to coffee in action, and is not a quack medicine. Write to the proprietors stating our recommendation, and you will receive full directions with the nut.

Belisarius.—The following is a recipe for preparing "Koumiss," which is a form of fermented milk:—"To one pint of new milk add three ounces of water, three ounces of old Koumiss (for a ferment), and one ounce of a saturated solution of 'sugar of milk.' Put all in a large covered jug, which is to be set for twenty-four hours in a warm place. A thick crust will then have formed on the surface. Beat this up thoroughly, and mix it well. Put the whole into champagne bottles (which should be only two-thirds filled), cork, and wire. Shake the bottles daily. In two days the Koumiss will be fit for use, but is improved by keeping for six weeks. Draw off from the bottles with a tap."

One who would woo Hygeia.—You are in good health, and the step you contemplate might be taken without fear. Your account of yourself would be regarded as quite satisfactory by any medical man. We need say no more.

C. Hardwick.—Glad the child has improved. In regard to the teeth, we hardly understand the dentist's position, except on the ground that being her first teeth they will come out of themselves. Only bad first teeth are liable to affect the second set. Our advice to you is to see well to the child's general health, and thus brace her up. The pains, which seem to be more in the gums than in the teeth, will probably leave her.

M. L. Hyner.—Try a vegetable dietary for a time; eat brown bread, fruits, &c. Avoid tea and coffee, and rest after food. Glad to advise you again, if need be. Don't tamper with aperient medicines.

Agricola.—Your former letter must have miscarried. We answer every query we receive. In your case we should lay most stress on a wise dietary, such as you are quite capable of choosing. Food should be light—soups mostly, fruits, milk, &c. Yours is evidently a nervous organisation, for which you are your own best physician. The "Pepsine," or Lactopeptin, should aid you. We do not think electricity would be of any service in your case. Rest after meals is of vital necessity for you. Glad to be of any further service.

Egg.—1. The remarks above (to "Agricola") apply exactly to your case. You must by experiment discover the dietary which best suits you. Our idea would be that of your living for a time almost on fluids alone—soups, Brand's "Beef Essence," &c.—and give your digestive system a rest. The eructations of gas are a consequence of feeble digestion. 2. Use Rowland's "Macassar Oil," rubbed into the roots, morning and night. 3. Depends on constitution and disposition—about once or twice a week at most.

Antonio.—Such a condition demands careful examination by a physician. There is likely nothing organically wrong; but an opinion worth having can only be formed after personal examination. The sense of numbness after the bath is due simply to feeble reaction. The bath should not be taken cold.

J. G.—We have sent your letter to the authoress of the paper, and will reply through Health as soon as we hear.

Elaine.—Send further particulars, please, of your symptoms as to cough, &c., also diet, and we will advise. Your description is too meagre. What is your previous history as to health?

Juvenis.—We cannot give other advice than that we have already indicated. You should try a little "Pepsine" with the food, which should be substantial, but not stimulating. Rest after meals also. You will gradually get rid of your unpleasant symptoms by attention to your general health.

Ernest.—Sometimes the difference you speak of is quite normal, and exists from birth without causing any disease. Try the effect of a support in the shape of a suspensory bandage; bathe with cold water frequently, and don't overdo exercise. If not bettered, we should recommend you to obtain a surgical opinion. Possibly, all active exertion should be avoided for a time.

W. Johnson.—We should advise you to pay great attention to your digestion. Try a little "Pepsine" with your food. By getting your stomach into thorough order your symptoms may disappear, and in any case they will be relieved. Try for a time concentrated food (Brand's Beef Essence, &c.,) and avoid all indigestible foods. Attend strictly to the action of the bowels, &c., and write again if not relieved.

T. D. P.—Thanks for your note. Hand the bill to the Superintendent of Police of your town. It is a disgraceful production—or give him the name of the seller of the article. If your death-rate is as you remark, there is certainly someting far wrong. The local editors should take the matter up.

Ajax.—1. The noises in the ear are probably due to wax. Moisten the wax with glycerine dropped in at night, and then syringe carefully in the morning with soap and tepid water. If discharge becomes severe, consult an ear-surgeon. 2. Probably some affection at the roots of the teeth, irritated by cold. Be careful of your general health in winter. 3. No need to be alarmed so long as your general health is good.

Z. A. Torell.—Can you give no reason for the swelling? A swelling in that situation may either be a rupture or an enlarged gland. Your doctors should be your best guides to its nature. We cannot advise on such a subject, which demands careful examination.

Meldreth.—We should hope much in your case from electrical stimulation to the lower part of the spine, carefully applied by a medical electrician; but we also think your wisest course would be to take the step you mention. The fulfilment of your wishes will often accomplish a cure. We are inclined to think you are simply over-anxious.

A Victim to Asthma.—Your case is simply one for the wise regulations of your food and habits. You should know now by experience the exact items which excite your attacks. See first of all to your digestion, and take "Pepsine" with your food. Glad to advise further, if need be.

J. S.—You must give your eyes a prolonged rest. Don't attempt to read at night for some months. This is your only hope of getting them thoroughly well. The sulphate of zinc lotion will only irritate the eyes. Use plain cold water, to which a few drops of laudanum may occasionally be added, and rest the eyes above all.

Europa.—Read and follow advice given for acne to "Glasgow" in present number of Health. The food should consist of light soups, fish, little meat, vegetables, milk puddings, &c. No stimulants. The soap you name cannot be excelled.

W. M. W.—Clothe warmly in flannel, and sleep in flannel as well. Avoid chills. Diet to be generous, but not stimulating. Attend also strictly to digestion. If any severe or painful attack comes on, this must be treated by a physician. Your chief hope lies in

[*Continued on page* 176.

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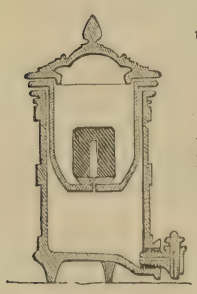

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, DECEMBER* 21, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

As in duty bound, we must cordially wish the readers of Health "The Compliments of the Season," and add our wishes that the advent of the festive period of the year may prove to one and all a time of true and healthy enjoyment. We do not need to remind our readers that the Christmas season is one which necessitates special care and precautions from a health point of view. Temptations to over-indulgence in "good cheer" are numerous at the present time; and the external influences of cold and chill require to be guarded against by special attention to the clothing of young and old alike. All that need be said on the health-aspects of Christmastide and New Year may be summed up in the statement that moderation in all things is one of the highest virtues we can exercise; and that the cultivation of the "happy mean" in every detail of personal life, is the surest method of obtaining from existence the greatest amount of true pleasure and profit.

* * *

Appropriately enough, the season of "peace and goodwill" appears to be marked by an increased amount of activity in the culture of kindness towards, and interest in, the poor and the wretched. It would seem as if the nation at large was being stimulated to the performance of good works and charitable acts. Two notable appeals have just been made on behalf of the bettering of the masses, and in aid of the idea that it is possible to make the lives and lots of the lower orders brighter and happier than they have hitherto been. What has been called "An East-End Recreation Scheme," was ventilated at the Mansion House, London, last week under the presidency of the Lord Mayor. It appears that a certain John Beaumont left a fund (now amounting to £12,000) to be applied towards furthering "the rational amusement and instruction of the people." The idea mooted at the Mansion House was the eminently useful and practical one of constructing a large place of popular resort in the form of a winter garden, concert-hall, reading-rooms, and a public institute, where musical entertainments and every other form of innocent enjoyment could be given to the people of the East-End.

* * *

Readers of Mr. Besant's charming novel, "All Sorts and Conditions of Men," will remember that a scheme of this nature is propounded and carried into practical effect by the heroine of the story. It would therefore seem as though the Beaumont Fund was destined to realise the novelist's idea; and "the sooner the better" say we. As was pointed out in our earlier numbers, the means of amusement possessed by the poor are limited in the extreme. Persons who are given to deplore the wickedness, drunkenness, and so forth of the masses, too often forget that the poor are entirely destitute of the means to make life even a little bright. When ardent temperance reformers deplore the influence of the public-house, and speak of the compulsory closure of the grog shops, wiser people can see they are only "barking up the wrong tree." The public-house, unfortunately, in itself represents in poorer districts the varied means of enjoyment and amusement possessed by the middle classes. The poor, having no other place wherein to spend their hours of leisure, find some solace for the time being in the gin-palace, which is at least warmer than the street corner, and a great deal more comfortable than their homes. To reform intemperance and crime, and to start poor people on the way of well-doing, we must never forget that they are human beings—a fact many well-meaning persons seem to forget—with the same sympathies, fondness for pleasure, desires to be happy, and delight in being amused, possessed by their more fortunate neighbours. If we are to combat intemperance, to reform vice, and to better the life of the slums, we must begin by presenting counter-attractions to the public-house and the low music-hall. And it is precisely this great and benevolent end that the proposed application of the Beaumont Fund seems likely to accomplish.

* * *

At the Mansion House meeting last week Professor Huxley made a stirring appeal on behalf of the objects for the promotion of which the meeting was convened. The Professor's experiences in medical practice among the slums were not, of course, novel, but they were stated with singular force and power. His assertion that the vast majority of poor persons who seek medical advice really suffer from a kind of slow starvation, "mitigated by bread and the stuff to which they give the name of tea," simply restates the experience of every medical student who goes through "dispensary practice" in any great city. Life in the East-end is an existence "of supernatural and perfectly astonishing deadness and dulness," and, added the Professor, "there was nothing to diversify the dull round of poor existence except what they found in the lowest class of public-house." This is a description in a nutshell of the life which must be brightened, and now that the ball has been set rolling let us earnestly hope it will continue to progress, and to crush out in its advance some of the miseries of the hydra-headed poverty and crime that abound.

* * *

Those who care to know what a number of earnest-minded workers have already done for the advancement of the lower orders in the East End of London should read Miss Caroline A. Martineau's account in Health No. 3 (page 43) of the entertainments which have for some time been successfully given at the Royal Victoria Coffee Hall in the Waterloo-road, formerly the Victoria Theatre, or more familiarly the "Vic" of East Enders. We should recognise the labours of those who, unaided, have proved themselves pioneers in this great and good work.

* * *

The second movement to which attention has been directed, may be named the fight against "death and disease behind the counter." Mr. Sutherst, president of "The Shop-Hours League," in a communication to the *Daily News* of Monday last, gives a number of details re-

garding the work of shopmen and shopwomen well worthy the attention of employers of labour and of reformers at large. The long hours, fatiguing duties, and laborious labours of shop-assistants and others are set forth in the plainest terms; and if even a tithe of the statements be correct, it seems clear that the lives of our shop-workers contain very little time for anything beyond hard toil and scant rest. In one establishment at Chelsea, the girls slept ten in a room; girls have to stand "all the working hours;" the food is of poor quality, and the time allotted for meals is of the shortest duration. Is there any wonder, we ask, that such toil under conditions of extreme hardship, should drive many a girl out into the streets, in the false hope of escaping a bondage that is too great to be borne? Truly, if any one is tempted to doubt the reality of "the struggle for existence" in human life—the prototype of which Darwin and Spencer have demonstrated occurs in lower existence—he need only read Mr. Sutherst's statements by way of confirming the idea that human units must go to the wall and fail, as surely and as certainly as do the weaker ones among animals and plants. Civilisation has its own struggle and evolution—the former often of terribly fatal kind.

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We would remind the readers of Health that Dr. Andrew Wilson's four popular lectures on "Anatomy and Physiology" are to be delivered in Prince's Hall, Piccadilly, London, at eight o'clock, on the evenings of Thursday, Dec. 27th, and Monday, Dec. 31st, 1883, and of Wednesday, January 2nd, and Saturday, January 5th, 1884. Tickets and syllabuses may be had from Messrs. Chappell & Co., 50, New Bond-street, W., and 14, Poultry, E.C.; Austin's Ticket Office, 28, Piccadilly, W.; and the usual agents. The subjects are: "The Bony Framework," "How We Move—Joints and Muscles," "The Heart and its Work," and "Nerves, Brain, and their Work." All the lectures will be fully illustrated by views and diagrams exhibited by the lime-light.

\+ \+ \+

We wish to direct the attention of our readers to the "Juvenile Fine Art, Scientific, and Industrial Exhibition," now being held in the Portland Hall, Regent-street, London, on behalf of the Children's Hospitals of London. A feature of this exhibition is the presence of East-End children, occupied in their usual avocations. Here are some of the gains of these poor bairns:—Matchboxes are made for 2¼d. a gross; shirts, 6½d. a dozen; boys' suits, 2½d. each; trousers, 4d. a pair; waistcoats, including button-holes, 9d. each. Comment is needless.

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Dr. Mortimer Granville declares that the discarding of the night-cap—the head-gear, not the hot drink being meant—has tended to produce brain-disease. He maintains that the blood is driven in from the surface of the head to the brain by cold, and that, as a consequence, people dream more frequently in winter than in summer; while a tendency to brain-disease is, in the same fashion, encouraged. Both of these statements are, we think, open to question. The brain-circulation is of such well-regulated kind, that the temperature of our sleeping apartments in winter is hardly likely to have much, if any, effect on the central organ of the nervous system. So far from preventing dreams, we are certain that in the majority of cases the use of a night-cap will induce the visions of the night. Wearing a night-cap may be beneficial for the old or feeble; in our opinion, it is utterly unnecessary for the healthy of any age. So far as the health of the head (and hair) is concerned, the clothing of the head while we are indoors is, at any time, a mistake.

Original Essays

"Life is not to live, but to be well."—*Martial.*

SHIP-SURGEONS:

WHAT THEY ARE AND WHAT THEY SHOULD BE.

By Dr. Domett Stone, F.R.C.S.

The Marine Department of the Board of Trade, over which Mr. Thomas Gray, we believe, presides, has been taken to task, and very properly so, for the *laissez-aller* it exhibits in everything connected with the mercantile marine of this great country, more especially for the apathy it evinces in the appointment of ship-surgeons. It is a notorious fact—as reprehensible as it is true—that thousands of emigrants leave these shores for distant parts under the impression (in some cases positive guarantee) that, as advertised, "an experienced surgeon accompanies the vessel," and, therefore, there need be no unnecessary alarm in the event of accident or illness during the voyage. Happy delusion! Of a truth, "Where ignorance is bliss 'tis folly to be wise," as the contrary is frequently the case! Is it surprising, then, that the mortality of passengers at sea should be considerably higher than elsewhere? The question, of course, resolves itself into one of supply and demand. A cursory glance at the correspondence recently published in the columns of our medical contemporaries proves conclusively that in numerous instances, men not only legally unqualified, *i.e.*, not registered according to Act of Parliament, but unqualified in other respects, in many cases not holding a single medical or surgical qualification, are appointed to take sole charge of large bodies of emigrants. Others are qualified, only in a sense, however—possess, perhaps, the diploma of the College of Surgeons and licence of the Apothecaries' Company, but are too young and too inexperienced for the onerous duties they have to perform. Again, there are others, the "ne'er-do-weels" and black sheep of the profession, and unsuccessful general practitioners. By Sec. 29 Medical Act 1858, the names of medical practitioners may be struck off the Medical Register for felony, misdemeanour, or infamous conduct in any professional respect; and, as a matter of fact, the names of about forty men have been so erased, and for want of the necessary check at the Mercantile Marine Offices some of these men have found employment in the service. As to the duty of seeing that no unqualified men are allowed to proceed in merchant ships, it may be mentioned that the superintendents of mercantile marine are required by Sec. 161 of Merchant Shipping Act 1854, and Sec. 10 Merchant Shipping Act 1862, to demand from the master of every foreign-going ship his certificate of qualification, as also those of his first and second officers and engineers (if any). The machinery is therefore at hand for ascertaining the qualification of every medical practitioner, but the Board of Trade contend that it is not the duty of the Superintendent of Mercantile Marine to inquire into the qualification of the medical practitioner engaged before him, and it is evident the Medical Registration Office is unable to carry the provisions of the Medical Act into effect for want of the necessary machinery; so it appears that one department of the Government cannot carry out the provisions of an Act, and the one that can will not assist in doing so.

Again, the owners of vessels employed in the North Sea whale fishery admit the dangerous nature of the traffic in which their ships are engaged, and therefore engage a *surgeon* (?), but it is notorious that for years past mere youths are shipped to attend upon the crew in the event of

accident to life or limb. Two vessels sailed last year from Dundee for the whale fishery, the ages of the "surgeons" being respectively 17 and 20!

We gather from a recently-published Parliamentary paper that during the six months ending 30th June, 1882, 108 vessels (104 of which were British) carried emigrants from Great Britain to the United States and Canada. These steamers were, on different voyages, under the *full* "medical charge" of no less than 141 different medical officers, duly approved by the Emigration Officer at the port of clearance, showing thirty-three changes within this period. Of these medical officers, 8 possessed no qualification which could entitle them to practise within the United Kingdom, and 35 others held but one diploma—29 as surgeon only, 3 as physician only, and 3 as apothecary only. Forty-six are reported as being but 25 years of age or under. Of these, 11 held but a single qualification. Of the entire 141 medical officers, only 80 would have been eligible for the most junior poor-law appointment, and but 27 possessing any qualification as physician and surgeon had reached their thirtieth year.

That so few able men should care to become ship-surgeons, arises from the fact that the pay is scandalously low, ranging from £3 to £10 a month—less than the wages paid to the steward—about the same as paid to the cook, steerage steward, and fifth engineer—the status not much better in the eyes of those on board; and the accommodation provided most inadequate—indeed, scarcely fit for a dog-kennel. One instance may be given on the authority of Dr. Irwin, as to the accommodation deemed necessary by the owners of one of the largest fleets in existence—carrying its thousands, and patronised even by Royalty—the surgeon's room measures 5 ft. 11 in. by 5 ft. 3 in., is without any window or port-hole, and is situated below in a narrow thwart-ship passage, the door being opposite to and within thirty inches of the door of the passengers' water-closets. Everything else on this vessel is magnificent to a degree. The saloon, to seat about 200, is gorgeous and in perfect taste; the steerage, for about 2,000, exceeds the requirements of the law; the captain is allotted two fine rooms, in one of which alone probably twenty persons could sit with comfort; yet for the surgeon, who has sole charge of the health of these persons, and on whose skill any one of them may depend for his life, this wretched hole, absolutely useless for any other purpose except a clothes-press or, perhaps, another water-closet, is deemed sufficiently good. Yet, not two years ago, this ship was visited and admired by half Liverpool, pictured and praised by half the papers in England.

It will thus be seen that shipowners can do much as they like, and that they invariably go to the cheapest market for their requirements. There are, of course, honourable exceptions. We may instance the Cunard, Inman, White Star, Allan lines, and the service over which the Colonial Government presides. With regard to the latter, it deserves to be recorded that all applicants for the post of surgeon-superintendent must possess a medical as well as a surgical qualification; they also have, or had, until somewhat recently, to undergo a special examination by the Medical Board of Her Majesty's Colonial Emigration Service, the same as with candidates for appointments in the army and navy; hence arises the very small mortality amongst Government emigrants conveyed to the Antipodes under the auspices of the Colonial authorities.

The bane is before us, and the antidote apparent to every one, save, it would seem, the Marine Department of the Board of Trade. We strongly urge ship-surgeons to at once enrol themselves into a Mercantile Marine Medical Service, and to lay their grievances before Parliament. Now is the appointed hour. "They must take the current as it serves, or lose their ventures," remembering that "that work which is begun well, is half done," and that "occasions, like clouds, pass away."

No More Gas in Daytime.—More than 30,000 of Chappius' daylight reflectors are fitted up in London only, by which means gas is done away with, and the places rendered cheerful and healthy, added to which a considerable economy is effected. Prospectus sent on receipt of two stamps addressed to (H.) Chappius, 69, Fleet-street, London.—[Advt.]

COTTAGE HOSPITALS.

THEIR COST.

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

SIXTH PAPER.

We must in this paper consider the question of Finance, and firstly the cost of procuring or creating the building itself.

It is impossible to give the faintest idea regarding the sum required for the purchase and modification of any existing structure, as all will depend on the nature of the building and the extent of the alterations required. But the case is entirely different as regards the cost of putting up a new hospital. New buildings cost very different sums, the variations depending chiefly on the nature of the materials employed in different localities. The site of the hospital in certain cases may be a matter of considerable expense; in others, again, a site may be presented as a gift to the hospital by a neighbouring proprietor. Disregarding the matter of a site, we may say that in the southern counties the sum necessary for the erection of an hospital is always considerably less than that required in the northern counties and in Scotland, for the style of building in brick and timber adopted in the former is much less costly than the northern system of erecting houses and other buildings of solid stone.

From the published accounts of "several cottage hospitals," says Dr. Swete, "it appears that a very good building, to give room for six beds, unless in an extremely expensive neighbourhood, should be erected for £500." This appears to be somewhat below the mark; nevertheless Longton Cottage Hospital, with ten beds, was erected in 1868 at an expense of £700, and St. Leonard's Hospital, at Sudbury, with twelve beds, cost in 1867 about £850. The more recently erected hospitals, however, have been more expensive, as the following list will show:—

Petersfield	with	10	beds cost	£1,100
Bourton-on-the-Water	,,	8	,, ,,	1,100
High Wycombe	,,	8	,, ,,	1,240
Maidenhead	,,	8	,, ,,	1,925
Ashford	,,	10	,, ,,	3,140

For the sum of £1,000, we may safely say that a very excellent hospital should be built.

The amount required to furnish a Cottage Hospital of six beds may be said, including surgical instruments and appliances, to be between £150 and £200. In the appendix to Dr. Swete's little work, there is a complete list of all the articles required, with their prices, to which we would refer the reader who desires fuller information on this subject.

It has been said that when once started and furnished, a Cottage Hospital of six beds will require a yearly sum of about £120 to keep it up. This sum seems too low, and from the returns of a large number of Cottage Hospitals, analysed by Mr. Burdett, we find that the annual cost is

about *twice* that stated above, although it is somewhat below that of the larger hospitals.

"The average annual expenditure in 174 Cottage Hospitals, having an average number of from nine to ten beds, and in 93 of which the average number of beds occupied was seven, was £464. 10s. This gives the cost per bed as £46. 9s. on the whole number, or £66. 7s. per bed occupied. When it is considered that the average cost per bed at a hospital like the London was £52 in 1879, being £69 per bed actually occupied, while at Charing-cross the cost was respectively £68 and £77, and at the Middlesex Hospital £71. 12s. in the one case, and £92. 9s. in the other, it will be seen that, on the score of economy alone, the Cottage Hospital has much in its favour."

As regards the methods of obtaining the means of supporting a Cottage Hospital, it is evident that the institution must largely depend on annual subscriptions. If it be practicable to set aside a certain sum as a capital fund, it would give a feeling of security against the possibility of any financial emergency, and it may be within the power of those in charge of the pecuniary arrangements to lay by the occasional donations and legacies in this way.

An essential feature of the Cottage Hospital system, as started by Mr. Napper, is the principle of self-help introduced by Mr. Smith, of Southam, more than fifty years ago. Every patient admitted to the Cranleigh Village Hospital must contribute a small weekly sum towards the funds of the hospital. The fact that they do thus aid the hospital as far as lies in their power, fosters the feeling of independence in the inmates, and preserves their self-respect.

Subscribers to the hospital must not be allowed any special right of sending patients into the hospital. The admission of patients by ticket is liable to great abuse, and must be denounced as a pestilent system; all sick people must be admitted by the medical man on duty according to the gravity of their conditions.

We think it should be a rule that all the medical practitioners of the district should be attached to the hospital either as consulting or as acting medical officers. It has been urged that one medical man alone should have the entire charge of the hospital, while all the practitioners of the district should be asked to co-operate with him by giving aid in any cases which may interest them. We are inclined to dissent from this opinion, and think that each acting member of the staff should take charge in rotation, while all the medical men, consulting as well as acting, should form a medical committee to superintend the medical affairs at the hospital.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

NINTH PAPER.

The *hunger* or *starvation cure* consisted in greatly diminishing the amount of food ingested, and limiting it to one kind of nourishment. It is scarcely necessary to say that this plan is not only pernicious, but very soon intolerable, and, consequently, cannot answer any permanent purpose.

The diet table recommended by Dr. Chambers in 1850 consisted almost exclusively of albuminous articles for food. He strictly forbade fat, oil, butter, milk, and also sugar, and he limited the amount of starchy matters, such as bread and potatoes, and also the quantity of fluid to be taken; and this is practically the method subsequently recommended by Mr. Harvey to Mr. Banting, and which goes by the name of the latter. Beer, however, was also excluded. Fat is forbidden by the authors of all these cures, in the erroneous belief that fat necessarily makes fat. But is this statement correct? Professor Ebstein, a recent writer on obesity, from whose treatment I differ in many important respects, truly says that this experience rests on the experiment that animals which had endured long fasting, and which were then fed on a little meat with a good deal of fat, deposited a part of this in their tissues. But this does not prove that fat consumed in a quantity correspondng to the normal amount of our daily food contributes directly to the augmentation of the bodily fat. Without disputing that fat eaten does, in certain cases, become deposited as such in the tissues, he correctly says that in the healthy organism, and when the movements of the body are normal and the different alimentary substances are taken in proper proportion, this fatty accumulation does not occur. The popular belief that "fat forms fat" must be accepted with great reserve, and is only true in a limited sense; for, if it were absolutely true, fat would not have so long held its place as a food of great importance to the economy, seeing that the obesity which fatty matters would have caused would soon have deterred patients and physicians from continuing it. Moreover, one knows that the consumption of cod-liver oil, taken as a medicine, is enormous; yet how rarely does one see patients fatten on it? This clearly shows that it is something more than the mere taking of fatty substances which is necessary to the deposition of fat.

It is now placed beyond doubt that though Banting's system, and those based upon it, reduce the body-weight, it makes the patient so weak that one is obliged to cease it. He or she revolts at the diet, or becomes dyspeptic, so that the treatment has to be discontinued, and is very difficult to recommence. Moreover, it is neither rational nor practical, and as it cannot be continuously used, its effect are, of course, not permanent—that is to say, its effect in reducing the body-weight are not lasting, but the evil it may do is, unfortunately, frequently so.

I divide the treatment into three parts:—1. Diet and regimen; 2. Surgical; 3. Medical; though in practice they are often used simultaneously. I need say but little here about the medical treatment, which consists, after a thorough examination of the patient as to his or her fitness, or otherwise, to undertake the cure, in prescribing such remedies as experience has shown to be of service.

But before giving the essential parts of the treatment of corpulence, it will be well briefly to recapitulate. It has been shown that obesity is a deformity, and a disease which is of insidious growth, and shows a preference for certain persons. This is evidenced by the fact that of a certain number of persons eating and drinking the same articles of food, only a certain proportion become fat, and though the exact causes and chemical changes, whether normal or perverted, which lead to this storage of fat have yet to be thoroughly solved, still, we know enough to believe that any cause interfering with the proper digestion and metamorphosis of fat may lead to corpulence. Experience has taught me that it is errors of quantity rather than of quality which favour fatness, and that when the law of supply and demand is broken—*i.e.*, when more food is taken than is necessary for the reparation of bodily waste—it becomes converted, in the predisposed, to fat or albumen,

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

which, chemically, is very different from fat. The interference may arise through inactivity of the tissues brought on by lack of sufficient exercise, or may be due to eating too much of the carbo-hydrates. All these points have, I trust, been more or less clearly brought out, and it only remains to say a few words concerning the so-called Banting mode of treatment.

It is now placed beyond doubt that the Banting diet, which consisted of lean meats and little of the more carbonaceous substances, will reduce the body-weight, but will not abolish the fat-forming capacity, which will return directly the ordinary mode of life be resumed; moreover, this plan reduces the constitutional strength of the patient, and very soon he revolts at the diet, or becomes dyspeptic, or otherwise seriously impaired in health, and the treatment is obliged to be discontinued. In fact, this regimen starves the non-fatty tissues of carbon, which is to them an essential element, and if it be desired to avoid this serious complication, the principal excretory organs become loaded with excess of albumen, causing degeneration through over-work, so that one is here between Scylla and Charybdis, and in trying to evade one evil, we meet with a greater. It will now be seen that according to modern lights, Bantingism is neither rational nor practical, and as it cannot be continuously used, its effects are, of course, not permanent.

Treatment.—The system which I have adopted may, as already stated, be divided into three parts: (1) Diet and regimen—*i.e.*, mode of life; (2) surgical; and (3) medical, which, in practice, are frequently used simultaneously. I will repeat that there should be a thorough medical supervision both before and during the treatment, so as to detect, and at once check, any altered condition of important organs which may have become slightly perturbed through the change in the way of living. It must also be remembered that people who have been for some time fat, not only have weakened organs, but are liable to certain affections of the heart, kidneys, lungs, and liver, which may contra-indicate anything but very gradual treatment. As to the many nostrums which have been advertised as cures for corpulence, were it not that such a large proportion of the public, and even of the so-called educated public, purchased these things, I should not insult the common sense of my more intelligent readers by saying anything more about them. The salts of potash, the iodides, and preparations of *Fucus Vesiculosus*, of which iodine is the basis, enter largely into these quack remedies. Arsenic has also been used, and I need scarcely say that a poison of this nature, unless given under competent medical authority, will soon lead to grave results. A mixture of which marshmallow and some other herbs form part has been much advertised, and, no doubt, has succeeded in emptying the pockets of people who would be offended if they were called fools. I hope I have said enough concerning these nostrums.

The true causes of death are seldom recorded in the statistics of mortality. The Registrar-General gets only effects. What people really die of are bad air, bad food, bad drink, and bad habits.

The Ink-Plant.—The expressed juice of *Coriaria thymifolia* (a native of New Granada), which is at first red, but turns deep-black in a few hours, forms an admirable ink, since it does not attack the pens, resists many chemical agents, and is always (?) ready for use. Attempts are at present being made to cultivate it in Austria, and the editor of a technical thinks that, if the acclimatisation succeeds, the ink-manufacturers will have in it a dangerous competitor.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

MACKINTOSHES.

By Philip Foster, M.D.

Now that these garments are coming into very general use, it is highly important that the public should clearly understand the manner in which they may prove injurious to health, and how any effect of this kind may be prevented. A Mackintosh is perspiration-proof as well as rain-proof, and, consequently, when one is worn the perspiration, being unable to escape, accumulates in the clothes, and they become damp. Upon its removal, the evaporation of this fluid—in other words, the drying process—commences, with its attendant loss of heat and well-known risk of "chill." The retention of this heat, which would otherwise be gradually lost, makes the Mackintosh invaluable during a long drive on a cold winter's day. The disadvantage, then, of this garment is, not that it inflicts any injury while it is on; but that our clothes being damp, we may catch cold upon its removal, unless our dress be changed at the same time; and when the dampness is very decided this precaution should certainly be taken. Judging from my own experience, I should say that the dampness thus produced is rarely sufficient to constitute any serious risk; for I have used mackintoshes, walking and riding, for twenty years, without ever having taken this precaution, or, as far as I am aware, having suffered in consequence of its neglect. I endeavour to avoid excessive perspiration, however, by walking slowly when I have my mackintosh on, and I do not wear it in hot weather, except for driving.

Popcorn Candy.—Popcorn, with all its associations of a good time, is once more in season, and children or young people who like to experiment with it can try the following recipe for crystallising it:—Put into an iron kettle one tablespoonful of butter, three tablespoonfuls of water, and one cup of white sugar; boil until ready to candy, then throw in three quarts of nicely popped corn; stir vigorously until the sugar is evenly distributed over the corn; take the kettle from the fire, and stir until it cools a little, and in this way you may have each kernel separate and all coated with the sugar. Of course, it must have your undivided attention from the first to prevent scorching. Almonds, English walnuts, or, in fact, any nuts are delicious prepared in this way.

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HEALTH IN THE SCHOOLROOM.

By Joseph J. Pope, M.R.C.S., L.S.A., L.M.,
Lecturer to the National Health Society, London.

That "a large and healthy population is the life and strength of a nation, and the source of its success," is a maxim that cannot be too often quoted. But few will deny its truth, yet very many can be found who disregard the precepts essential to its observance.

To arrive at this happy condition, the necessity of a general and thoroughly practical acquaintance with sanitary science must be admitted.

Are we, as a people, doing our best to attain this end? Dr. Richardson has recently drawn attention to the progress that has been made in sanitation since public notice was particularly directed to its value in 1854 when the horrors of the Crimean War so painfully marked the results of ignorance and neglect, and we are told to acknowledge with gratitude an equal advance evidenced by the labours of men in Italy, France, and Germany towards the same good end.

And I would gladly admit that in some of our colleges and medical schools, teachers are imparting special instruction to classes of students; while lectures and addresses by popular scientists are now and then delivered at a few of our institutions throughout the country, and thus some small opportunities are afforded for a more general knowledge of the laws of health and life. So far so good. I cannot, however, fail to observe that the everyday application of even the first principles of a healthy life is but sparsely recognised, and most inefficiently carried out. If our life and health depend, as they undoubtedly do, upon certain well-recognised principles in sanitary science, at what period must the greatest value be attached to their influence? Surely the period of growth and development. It is in early childhood that good constitutions are made or ruined. It is upon children that any unsanitary condition falls in its effects the heaviest. Their delicate frames are infinitely more sensitive, and the breath of poison or the chill of hardship easily blight their tender life. The more so, if a child be placed under educational restraint, or particularly so when it is deemed essential to insist upon a compulsory code of learning of equal severity and scope for every child alike.

Tissot says: "Great progress in study is, amongst children, very often the tomb of their talents and their health."

"It is not sufficient," says Dr. Elizabeth Blackwell, "that our course of education laid down for our children and youth should not injure, it is absolutely necessary that it should do them *positive physical good.*" I have so often noticed that such scanty care is bestowed upon the health of the body, and so much mistaken solicitude exhibited with regard to the brain culture, that I would venture to call attention to a few points absolutely necessary for obtaining that all-important condition, health in the schoolroom. First and foremost, for the healthy life of children we must have plenty of light, pure air, and warmth. They are as essential to their well-being as to the blooming of flowers; and so surely does a sad spirit and pale face result from their absence or diminution, as the bird ceases to sing when the cage is covered, or the plant grows white and diseased if kept in the dark.

Even in houses of pretension, the schoolroom is, in many instances, the very worst that can be picked out, often the dullest, poorest, and most useless of all the chambers. It is a popular, but very mistaken idea, "that any room is good enough for a schoolroom." But we forget how it is to be occupied by those who breathe quicker and live faster than older people, that many hours are to be spent in it, and that its occupants are of an age when they can least combat with unsanitary evils. Surely nothing can be worse than the underground schoolrooms we still find associated with many of our churches and chapels, and more so in the fashionable parts of our cities and towns. In many instances I have found them veritable cellars—dark, damp, and truly dismal; and for hours children have been confined in such dungeons, surrounded by most unhealthy conditions.

The schoolroom should face, if possible, south or south-east, be furnished with *large clear windows*, capable of being opened top and bottom, and of being easily and frequently cleaned. Away with fancy glass, case-mated windows, or ornamental framing. Avoid ground or ribbed glass, and be as sparing as possible of curtains or blinds. The direction of the light is also important. It must not fall full on the faces of the children. A glare is at all times most objectionable, and to children's sight it is positively hurtful. Yet I often find this arrangement in our Government schools. In all schoolrooms the light should fall from the left-hand side, as the children sit; and from as great a height as possible. This will prevent that common habit of leaning over the desk or book, and bending the head upon the chest—an evil practice caused by the desire to obtain the slight relief afforded by the shadow of the forehead.

Then the ventilation of our schoolrooms is so frequently incomplete. The windows, especially in the village school, and those connected with religious interests, rarely open in their entirety. A triangular pane may perchance turn on a swivel, or a small portion of the window fall or rise, dependent for its action on a cord or cords too often found broken. A ventilator may exist in the wall or ceiling, but it is too certainly inefficient from dust or rust. I have seen them rendered thoroughly useless by material being wilfully placed to obstruct their action.

Fresh air is hardly thought to be a scholastic requirement. Its practical worth does not yet form a part of the code of education. Our slates and copy-books do not teach sanitary truths; they are still supplementary points of learning, treated as interesting theories, and not as vital personal facts. How often do we find directly the scholars leave the school-room it is *closely closed*, and the door locked by the departing teacher, only to be reopened at the appointed hour of reassembling?

Recall, and I feel sure you can, that peculiar and indescribable sense of "stuffiness" that greets you on visiting a large schoolroom. Let me assure you that means serious organic impurity of the atmosphere, which has a most baneful influence upon children particularly. No condition is so calculated to arouse scrofulous disease.

Schoolrooms are best warmed by open fires and fireplaces. Stoves, however well appointed, over-dry the air, and invariably give off some injurious products. I am no advocate for either hot or cold rooms; a temperature of 60 to 65 degrees Fahrenheit is quite sufficient for health and comfort, and it should be maintained as regular as possible, for there is nothing so trying as constant changes of tem-

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

perature. Dr. Richardson says: "A room that is first hot and then cold is as dangerous as a friend of the same temperament."

Recollect, children cannot bear cold. The younger the animal, the less power has it of resistance. No work, therefore, in a cold schoolroom before breakfast.

I have often thought it very unwise to turn children, even for a short time, out of a warm school-room into the playgrounds or gardens during the cold weather, and I am convinced that the risks are materially increased, unless some extra clothing be worn and free natural play encouraged.

Last, but not least, consider for a moment a matter of almost equal importance with those already mentioned. I refer to the *cleanliness* of the schoolroom itself. Strict, indeed, may the teacher be as to the scholars' appearance, careful enough to point out or check any dirty or untidy dressing, but what can be said of the sanitary arrangements with respect to the room and its surroundings?

Let me once more ask you to think of the parish or district schoolroom, with its dusty rafters and window-sills, the festoons of cobwebs round the cornices and in every corner, the uncleaned windows, and the dirty finger-stained walls, desks, and forms. I speak from bitter experience. In my capacity as Lecturer to the National Health Society; I have visited very many schoolrooms in and around London, and have from time to time—nay, even after a course of lectures—seen the very principles I have so earnestly endeavoured to explain directly disregarded, and whilst surrounded by conditions the very opposite to those advocated, have grieved to find no efforts made nor improvements promised by those who, acknowledging the force and value of my remarks, have also the power of practically carrying out the suggestions.

It is on this account I would seek to draw further attention to these most important factors for a Healthy Schoolroom.

Health should be regarded as the base, and instruction merely the ornament. The first consideration should be the production, not merely of clever, but also of healthy men and women.

Sozodont for the Teeth.—According to the *Rundschau*, this is composed of the following ingredients:—

Venetian soap	60	parts
Glycerin	60	„
Alcohol	200	„
Water	120	„
Oil of peppermint	16	„
„ anise	8	„
„ cinnamon	4	„
„ cloves	1	„

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION, AND HEALTH.

By B. H. Thwaite, F.C.S., &c., Civil Engineer.

SECOND PAPER.—THE PUBLIC HEALTH ACTS.

It was not until after 1848—a year memorable in the history of British sanitary legislation—that better household drainage arrangements became generally adopted. In the early periods of our history the English Common Law provided but very imperfectly for the social exigencies of our population. There were in reality no sanitary provisions, although a legal clause did insist that every highway must be kept in repair, yet only, however, so far as the necessity for its preservation as a line of road was concerned, and there was no mention or insistance that the highway must be swept or scavenged. "If the road be miry," said an old Judge, "the traveller must pluck up his hose and put on his boots." Hence, although the highway, owing to its miry condition, might be well-nigh impassable, there was no legal remedy. By a process of legal evolution, the germ of which was the clause as to highways referred to, the Crown was eventually empowered to issue commission to consider the means, and insist on the fulfilment of schemes for the sewerage and drainage of large districts; but there was no legal provision for the drainage of separate and individual dwelling-houses. When nuisances were produced by some offensive neighbour, the householder had recourse to the Court of Leet, where the subject was investigated, and possibly a penalty enforced; but this process was not only tedious and expensive, and productive of much ill-feeling, but the results were rarely efficacious in removing the evil. Hence ill-regulated persons could with impunity render their houses obnoxious and dangerously unhealthy, not only to themselves, but to their neighbours.

As civilisation advanced, this condition of affairs became intolerable to many of our countrymen; and in the annals of Parliament a long series of applications, extending over a period of a century and a half, and from both public and private bodies, will be found for the regulation of persons in their out-of-door life, and for the repression of petty annoyances and nuisances from which householders may suffer by the carelessness, wilfulness, or ignorance of their neighbours. Generally, if the application for Parliamentary powers was at all reasonable, it was conceded; but often enough the application was opposed for the protection of some private or vested interests; and in those days, when class interests were so rigorously upheld, the opposition on this ground invariably proved successful, and a vested interest was often the means of preventing a sanitary amelioration. In this way legislation was satisfied up to the year 1845, when Sir Robert Peel's Ministry introduced a series of measures based on those of the preceding and irregular private Acts. This series of sanitary measures—eleven in all—were all passed between the year of their introduction and 1847, and formed a code subsequently known as the Model Acts. It may be mentioned here, however, that in 1845 the Duke of Newcastle introduced a Bill for the improvement of sewers and drains of towns, which, however, did not become law. About this time a commission, which was appointed to investigate into the sanitary condition of the metropolis and other great towns in England,

published their report, and this had the effect of drawing the general attention of the public to the necessity of increased sanitary legislation. This attention was intensely increased and stimulated by the fatal epidemic of cholera which about this time swept over the country with terribly fatal effect. In deference to the clamour for increased sanitary legislation, Lord Morpeth, in 1848, introduced the celebrated Act now known as the Public Health Act, a measure which, with all its imperfections, equals, if not surpasses in the beneficial importance of its bearing on the welfare of every class of the British public, all other Acts *pro bono publico* which are inscribed in the annals of British legislation. Like most legislative efforts, the Public Health Act, comprehensive as it was, was found to be inadequate in some of its clauses, and numerous alterations and additions have been made to it. The first amendment to the Public Health Act was that of the Local Government Act of 1858. This Act was also considerably amended by the Act of 1860 for the Prevention of Diseases. The Sewage Utilization Act followed in 1865, and in 1866 the Sanitary Act was passed. The Public Health Act of 1875 gave greater efficiency to the various former Sanitary Acts.

Brief Summary of Important Clauses of the Public Health Acts Referring to House Drains and Closets.

Drains.—No new house is to be built or occupied, or old house (pulled down to the ground-floor) rebuilt or occupied, without proper drainage. The drain is to be connected with the sewer of the local authority, unless there is no sewer within a hundred feet "of some part of the site of the house;" in that case the connection is to be with a covered cesspool, or other place not being under any house. In any case the works must be constructed in accordance with the requirements of the authority. Penalty for default, not exceeding £50 and costs. If any house within the district of a local authority is without effectual drainage, the owner or occupier shall be required to make a connection with a public sewer, if there is one within a hundred feet of the site of such house, or with a covered cesspool or other place, if there be no sewer available. The authority may prescribe materials, &c., to be used. If the owner does not comply with the order, the local authority may execute the works and recover the outlay from the owner in a summary manner. If a house has a drain which, though sufficient generally, is, in the opinion of the local authority, objectionable for any reason, the local authority may close such drain, on the condition that it provides, at its own expense, an effectual substitute. If a house is drained into a sewer, and the drainage is not defective, a local authority, if it chooses to divert the sewer, cannot charge on the owner of the house the expense of making the new connection.

Closets.—Every local authority is to see that the house drains, water-closets, earth-closets, privies, cesspools, and ashpits within its district are constructed and kept so as not to be a nuisance or injurious to health. In order properly to attain this end, the surveyor or inspector of nuisances is armed with certain powers of entry. If he find any drain, &c., in that condition as to require alteration, the local authority must serve notice on the owner or occupier to execute within a reasonable time the necessary works. Penalty for default, 10s. per day or less. If the default continues, the local authority may execute the necessary works and recover the expenses in a summary manner, or declare them to be "private improvement expenses." Any person may invoke, by writing, the intervention of the local authority as to this matter. By this clause any owner or occupier can direct the attention of the local authority to the defective condition of his neighbour's or any other person's drains. No new house is to be built, or old house (pulled down to the ground-floor) rebuilt without a sufficient water-closet, earth-closet, or privy, and an ashpit furnished with proper doors and coverings. Penalty, £20 or less.

A local authority must require the owner or occupier of a house unprovided, as aforesaid, forthwith to provide such of these appliances as it may deem requisite; on default, it may do the work required and recover the expenses in a summary manner, or declare them to be "Private Improvement Expenses." A water-closet, &c., may, by leave of the local authority, be used in common by two or more houses. The word "house" includes schools, factories, and other buildings in which more than twenty persons are employed at one time.

Earth-closets having come into use, they are the subject of special provision. Any enactment requiring the construction of a water closet, may, with the approval of the local authority, be satisfied by an earth-closet.

The drainage and closets of buildings may be the subject of by-laws.

The authorities of most of our large towns have taken advantage of the power thus conferred by the last paragraph and have based their local by-laws on the model code issued by the Local Government Board in conjunction with the Sanitary Act of 1875. As a copy of these by-laws can be obtained at any law-stationers, it is unnecessary to reprodnce them here. The clauses referring to drains and closets, however, may be briefly summarised as follows:—

All damp subsoils, and the lowest stories of all buildings, are to be drained into a sewer.

The pipes are to be of glazed stoneware, and when laid to carry away the wastes from closets, they are to be bedded in concrete.

Main drains are to have a trap as near the entrance of the main drain as practicable.

No drains inside a house are to have any inlet other than from a water-closet or slop-sink, and all overflow pipes must discharge externally over an open trap grating.

All closets are to be provided with a separate cistern, or with means of supplying the closets with water other than directly from the cistern used for the supply of drinking water.

All soil-pipes and cesspools are to be properly ventilated.

The use of the form of closet known as the pan-closet with the D-trap is distinctly prohibited.

All closets shall be placed against external walls, and provided with a window not less than 2ft. by 1ft.

The clauses of the by-laws enumerated, if properly interpreted by the official representative of the sanitary authority, leave but little to be desired; but, nevertheless, it is a notorious fact that instances of badly-drained houses are the rule rather than the exception.

To Drive away Rats and Mice.—Sekerka recommends to pour common tar into the rat or mice holes, which either kills them at once, or will, at least, make the locality uninhabitable and impassable for them, since it takes a long time to dry.

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

By D. A. Sargent.

(From the *North American Review.*)

SECOND PAPER.

The game of foot-ball opens a somewhat wider field. More men are required, the rules are easily mastered, and the qualifications demanded are more generally possessed. One should be sound and healthy in heart and lungs, and able to stand thumping and bumping for an hour or two with impunity. If to this hardiness be added a fleet foot, strong limbs, quick perception, and presence of mind, one has the requisites of a foot-ball player. But, as even this game is now played, skill is of the highest importance, so that here again we see the same tendency to raise the standard of the sport, and to narrow participation to the capacity of the few. Moreover, there are serious objections to this game. We have not the space to discuss them. It is a rough-and-tumble contest from the beginning to the end; bruises, strains, or internal injuries are its natural accompaniments. Of all college games this is the most accessible, and yet for the average and untrained student it is unquestionably the most dangerous.

The athletic contests, or "field days," of spring and fall open a still wider field for physical achievements. The exercises comprise running, jumping, walking, putting the shot, throwing the hammer, and similar sports. These afford an excellent chance for the specialist to display his abilities, and only specialists enter them. In their case the entire energy of the system has been concentrated on the development of special powers, and everything else set aside as useless. This is the great objection to athletic exercises as they are at present conducted.

The gymnasts, as a separate class have, of late years, been rapidly diminishing in numbers. Outdoor sports have grown in popularity, and the gymnasium is now used, regularly and systematically, chiefly by the boating men and the ball-players, as a means of keeping up their strength during the long winter months, and of adding something to the skill required in their chosen sport.

We have thus seen that the whole system of college athletics is based upon a spirit of competition. Symmetry of development is never thought of, nor is it ever acquired by exclusive reliance upon any of our popular sports. Indeed, we would venture to select from any group of recognised athletes the oarsmen, the ball-players, and the gymnasts, simply from their peculiar muscular development. In many cases these peculiarities are so marked that one can readily distinguish a starboard from a port oar, the pitcher, catcher, and short-stop from the rest of the nine, and tell the piece of apparatus upon which a gymnast has won his distinction. To devote themselves wholly to some favourite sport, to make a "record" that shall be talked about by future classes; to become famous as oarsmen, or pedestrians, or ball-players; these are the ambitions of the men who are giving their time to such exercises. The tendency of college students to-day is to look upon college athletics simply as a field for rivalry.

We have thus far been speaking of the men whom we termed collectively the college athletes, but this class comprises only a small proportion of those who attend our literary institutions. There is a second class, whom we have called sporting men. In what does their physical culture consist? Mainly in attending the races and games. If the river and the ball-ground are at a distance, a tramp to either calls for a little exertion, but in the exercises themselves the sporting men never participate. "Tailorising" is for them a more convenient method of making up for physical deficiencies. They do the betting, and contribute largely to the financial support of the several athletic organisations; but they are never seen in the waist of a boat or on the floor of a gymnasium. From this class of men, however, often comes the best athletic material. Their spirit and buoyancy are indicative of a good natural heritage, and with these innate qualities for a basis, a thorough system of training produces the most favourable results. It is just this kind of temperament that should find a legitimate channel for activity in systematic exercise. Let this exercise be mental or physical, laborious effort of some sort should be exacted daily. Perhaps the fatigue following physical effort is for this class the most beneficial, as it is rarely accompanied by nervous irritability, and it sets at rest those vague, undefined longings which often supervene after severe mental application.

Still another class is composed of those men who attend strictly to the college requirements, and who may appropriately be termed the scholars. In this group are to be found the hardest intellectual workers, men who study almost incessantly during their waking hours, and among whom are some of the most highly organised and finely balanced students in college. It is needless to say that these men take no time for exercise or recreation. They never go to a boat-race or a ball-match, and the feats of the gymnasium are distasteful to them. A hurried walk into the country some Saturday afternoon, or a ride to the sea-shore, gives a little exhilaration; but physical effort of all kinds is irksome to a close student, and, unless he is accompanied by an agreeable companion, his mind is invariably brooding over some lesson or problem as he saunters along. Walking in this manner is merely taking an airing, and is no more beneficial than sitting by an open window. In the ranks of the scholars we find, however, a relatively small number who direct their college course intelligently to the acquirement of symmetrical culture. Systematic habits of study are supplemented by systematic habits of exercise, and they would no more neglect one than the other. Such men are often called machine-workers, but they are the ones who profit most by their exercise, because they take it regularly and make it subservient to their highest aims.

Of the idlers little need be said. They differ essentially from the classes we have considered, but chiefly in a negative way. They have no favourite pursuit, either intellectual or physical. They are surrounded by the stimulating influences of college life, but their inertia is seldom overcome, the golden days of youth are wasted, and the opportunities of mental and bodily training are carelessly thrown aside.

Half the nervous disorders of women are due to the monotony of their lives; the other half, perhaps, to excess of excitement. The healthy are between the two extremes.

"Lochinvar" Old Scotch Whisky.—For invalids who are ordered whisky, or for those who use this valuable spirit to promote and aid digestion, it is important that the whisky *be well matured by age.* The "Lochinvar" is a blend of the finest Highland whiskies, and is *guaranteed five years old.* Sold by all wine merchants. Wholesale only of Hills & Underwood, Eastcheap, London.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

Cremation in Dorset.—Dr. Leach writes as follows to the *British Medical Journal*:—"As one of those whose great privilege it has been to assist in carrying out the last wishes of my dear friend, Captain Hanham, perhaps I may be permitted to supplement the report of the cremation of his body, which has already appeared in the London daily press, by a few more particulars of that most pure and sacred rite. In so doing, I feel that I am acting in strict accord with his oft-expressed desire that this method for the disposal of the dead should be as often as possible placed before the public in its true light, in order that it may help to dissipate that sentimental dread which exists, and naturally so, in so many minds. After the ceremony you have been told that the body was left in the beautiful mausoleum Captain Hanham had built in the grounds of Mauston House; thence it was borne by friendly hands to the crematorium the same evening, and was placed in the chamber of the furnace fashioned for its reception. As it was the custom of the Greeks for the dead person's nearest relatives and friends to light the funeral pile, so here that duty devolved upon his adopted son, Mr. J. C. S. Hanham, his friend, Dr. Edney, and myself. Soon the all-consuming and purifying fire was at its work, and at the end of two hours we saw, by removing one of the small side blocks, that it had indeed done that work well. We, as medical men, could recognise the various portions of the bony structure in the sea of fire, and the position of the body at the bottom of the furnace was by these means easily indicated. That there was nothing revolting to the feelings in the sight was truly shown by the fact that others present, not accustomed to such sights, looked on eagerly, and expressed an unanimous opinion in the beauty and purity of the rite. After another hour it was found that the snowy bones crumbled at the slightest touch, and cremation was decided to be complete. The furnace, which has been so well described by the writer of the report above referred to, was the work of Mr. Richards, of the Wincanton Iron Works, who, in its construction, displayed his complete knowledge of the principles governing that perfect combustion so necessary for the purpose of cremation. The evening was beautifully clear, and, notwithstanding the lowness of the chimney, so perfect was the combustion that not the slightest trace of odour was perceptible; and, having now thrice witnessed cremation, I can most truly assert that in no possible way can it be injurious to health, or in the least degree offensive to the senses. Can those who know the unspeakable horrors of our great city cemeteries say as much for earth-burial? The two processes, when considered with regard to the safety of the living, do not bear comparison; and, seeing that they so closely resemble each other in both being processes of oxidation, differing chiefly in the fact that in the one case, by the agency of fire, the process is complete in an hour or two, whilst in the other, by a slow horrible decomposition, it is not complete for years. Seeing that the end is the same, the residuary dust and ashes consisting in each case of the earthy matter of the body alone, it can only be a question of time to overcome that sentimental dread and the curse of prejudice ere this will be the accepted method for the disposal of our dead. To-day, the apparatus having cooled, we collected the ashes, parts looking like frosted silver, parts like snowy dust. Reverentially and carefully was this done, as at Hector's funeral-pile, where

> His brother then, and friends, searched everywhere,
> And gathered up his snowy bones with care.

These will be deposited eventually in an urn, and be placed in the mausoleum side by side with the urns containing the ashes of his late wife, Mrs. Hanham, and his late mother, Lady Hanham. As Captain Hanham was the pioneer of cremation in a practical form in this country, so also has it been due to his courage and forethought that those to whom he confidently entrusted his own cremation have been enabled so faithfully and so successfully to encompass it. That it may bring forth such fruit in the coming future as to be an enduring memorial of his revered name, must be the earnest wish of all who desire the health of their fellow man. I cannot do better than conclude in the present Bishop of Manchester's words, when he said: "In the same sense in which the Sabbath is made for man, and not man for the Sabbath, I hold that the earth was made, not for the dead, but for the living. No intelligent faith can suppose that any Christian doctrine is affected by the manner in which, or the time in which, this mortal body of ours crumbles into dust and sees corruption."

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Physical Education of Girls.—We are pleased to find that increased attention is being paid to the question of the physical training of young and growing girls. The Swedish physical exercises have found general favour, whilst many games and athletic pursuits are now permitted which formerly were prescribed by prudish schoolmistresses and timid mammas. There can be no doubt that the present movement is in the right direction so long as it is kept within reasonable limits; for the extension of competitive athletic sports to our girl schools would be a great mistake. But, short of this, the daily employment of systematic exercise will prove of the greatest service in after-life in developing the frame and obviating those ills which so frequently supervene in the passage from girlhood into womanhood. The disorders which occur at that period are generally to be referred to imperfect development and to defective nutrition. When the girl is naturally healthy, little is wanted but to encourage, or we might say insist on, ordinary systematic exercise being taken daily. This should consist of certain gymnastic exercises, which ought to be practised each day as part of the school work, supplemented by such games as lawn tennis, rounders, golf, &c. Swimming is an exercise that every girl should indulge in, and it ought to be taught systematically at all our girl schools. Rowing, too, is an exercise which greatly strengthens the muscles of the trunk and abdomen, and is therefore serviceable, when employed with judgment, in giving grace and elegance to the figure. Schools at the seaside or near a river should avail themselves of the opportunity and have rowing taught by some trustworthy boatman. Riding has always been an exercise in favour with the profession; the expense attending it, however, debars its pursuit in many cases. With delicate girls, or those rapidly growing, some of the above-named exercises may prove unsuitable; in these cases it is best to rely at first entirely on gymnastics till the frame is strengthened. Until recently dress proved a great barrier in preventing the free exercise of the limbs and body; but the introduction of a more sensible costume for the playground will in future, it is to be hoped, remove the disadvantage. The costume in use consists of a short skirt of blue serge, draped with a crimson scarf, blue jersey, short trousers, and long stockings. Such a dress is

quite suitable for girls under fifteen, and we fancy those who are educated on this system will not, as they grow older, readily submit to the bondage of high-heeled boots and tight-lacing, though probably they would have to adopt a more lengthened skirt.—*Lancet.*

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Day and Night Nurseries.—The day and night nurseries are better situated on separate floors, or at some distance apart; where this cannot be done they should be arranged not to communicate directly with each other, so that one set of rooms may have the windows left open to the air for a good blow through, without fear at the same time of the other room being chilled. There are points in the general management of the two kinds of apartments that may be considered together so as to contrast their special requirements. The day-room is for cheerful activity, the bedroom for quiet repose; hence a great difference is in the way of lighting the rooms. All rooms, whatever their purpose, should be well lighted, so that everything in them can be distinctly seen, and no part left in obscurity and in danger of neglect; and the door should not be directly opposite the fireplace in day-rooms, without a special contrivance for ventilation, to be described further on, as the draught is mostly from under the door to the fireplace, and so along the floor; this can do no harm in the bedroom, but it is bad in a sitting-room, and specially bad for children, who do, or should, spend much of their daytime in creeping or playing on the carpet.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Household Cookery and Laundry Work. By Mrs. Black, of the West-end School of Cookery, Glasgow. (Glasgow: W. Collins, Sons, & Co.) 1883.

"Good thoughts come from the heart; bad thoughts from the stomach!" Whoever it was that first made this half-serious, half-jesting assertion was not so far wrong as some may imagine, in that he seems to acknowledge the power which our health exercises on our happiness—social, moral, and even spiritual. As our bodies, to be kept in health, must, among other things, be nourished by wholesome and well-cooked food, we may regard Mrs. Black's book on household cookery as a means towards obtaining happiness. Besides this, there is no denying the fact that a practical knowledge of domestic management generally is the best oil to make the household wheels run smoothly, and thus avoid many of the small jars which vex and annoy young wives and housekeepers; and often vex through them, their male relatives, who understand them less, and therefore feel them more. As Mrs. Black writes in her introduction:—

> This little book proposes to be a practical guide to some departments of domestic management in a plain household, namely, in cookery, laundry-work, and household management. Ignorance of these subjects has caused many a young housekeeper headaches and heartaches; and only after many trials and much waste has she succeeded in learning duties which a little early training would have made quite easy.

Among the recipes given may be found many so simple, useful, and economical as to bring them within the reach of the most unpretentious housekeeper, while young housewives anxious to concoct some "dainty dish to set before the king"—in other words, to tempt and please their husbands and brothers, cannot fail to be satisfied with some of those provided by Mrs. Black. Of the first-class we may mention that for Lentil Soup:—

> Take 1 lb. of lentils and wash them thoroughly in many waters until they are perfectly clean; soak them for a night in cold water, then put them into a pot with the water in which they were soaked, and as much more as makes 2½ quarts, or 10 breakfast-cupfuls. When this boils, add carrot, turnip, parsnip, 2 large onions—all cut up roughly—and a small pinch of carbonate of soda about the size of a pea. Allow it to boil two hours, then strain through a colander, washing the lentils all through, except the skins; return it to the pot to warm. Season with pepper and salt, and serve. Lentil soup is delightful if nicely made, and requires no meat of any kind, or bones, as it has the taste and the good properties of butcher-meat to a large extent in itself.

The following for macaroni and cheese is very simple, and makes a tasty dish for dinner or supper.

> Break up a quarter of a pound of macaroni into short lengths, and put it in a saucepan with enough boiling water, slightly salted, to cover it well, and let it boil slowly for twenty minutes; then drain it and put it on again with the milk to boil till it is tender, but not broken. It will require twenty minutes or half-an-hour. Have the cheese grated (it should be old and rather strong), and mix half of it with the macaroni, a little salt, cayenne pepper, and the mustard; then turn it out on a flat dish, and sprinkle over it the bread-crumbs and the remainder of the cheese, and place on the top the butter broken in little bits. Place it before the fire to brown on the top, and serve hot.

Some of Mrs. Black's miscellaneous hints are not only good, but are absolutely things which everyone who has any regard for his or her health ought to know. For instance, writing of fish she says:—

> All fish *out of season* are unwholesome, and sometimes positively injurious. Buckland, who has given so much information on the nature and habits of fish, writes very emphatically against the taking and using of fish out of season. It is said that fish are fully as nutritious as animal food; and though they may not have such a satisfying effect upon the stomach, that arises from their being so easily digested. They are not only good food, but food of the best description, well able to supply the wants of the body, suitable for young and old, healthy people and invalids.

Of vegetables, Mrs. Black writes:—

> All green vegetables are anti-scorbutic or blood-purifiers; they help to dissolve other food in the stomach, and assist digestion, and, as they contain a great deal of water, are particularly suitable to be used in hot weather. The blood contains a great many mineral substances as well as salts, and vegetables and water supply some of these necessaries.
>
> Wheat contains more of the mineral matter of which bones are formed than any other food; and all growing children should have a dietary consisting of bread, or food largely composed of flour. . . . N.B. A piece of bread tied in a linen rag and put in the water, prevents the unpleasant smell the boiling of green vegetables causes in a house.

Of milk and eggs, again, Mrs. Black endeavours to show us the value by telling us that the former contains all the substances necessary to sustain life, while the latter are very nutritious and contain a great deal of nitrogenous food in a remarkably concentrated form. We are reminded, also, under this head that puddings are much lighter steamed than boiled.

Perhaps more important, and certainly less studied by the majority of people than the foregoing, are the hints on sick nursing, which is, as Mrs. Black says, "even more essentially women's work than housekeeping, and requires knowledge, combined with tenderness and care, a feeling heart, and skilful hands." Some women, it is true, are born nurses, and seem to know by instinct the requirements and arrangements of the sick-room; but to the many who suddenly and unavoidably find themselves in the position of sick nurse, without having acquired the practical knowledge and skill requisite, Mrs. Black's little book will prove an invaluable help. Among some of the most delicate dishes meant to tempt an invalid's appetite, we may mention the following:—

> *Beef-tea Pudding.*—Soak the bread-crumbs in the beef-tea, and

allow it to stand a few minutes. Beat up the eggs (two), and add them with a very little salt; then pour all into a small dish, and bake for a quarter of an hour, or steam gently about half an hour till it gets firm. This is a very nourishing dish for the sick.

Apple-fool.—Bake four nice apples till quite soft, and scrape the pulp out; add to it the sugar, and a small slice of sponge-cake crumbled up, and one egg well beaten. Whisk all together with a fork, stir over the fire till it gets hot, then dish it nicely, and use either hot or cold.

Milk Jelly.—Scald a calf's-foot, and scrape it very clean, and put it on to boil with the water. Let it boil gently for two hours, then add the milk, cinnamon, and lemon rind, and gently simmer for two hours longer. Sweeten with the sugar, and then strain, and pour it into a shape to get cold. This is most nourishing for children and invalids.

We should mention that at the head of each of these recipes, all the ingredients needed are detailed—a plan which prevents mistakes, and is a great help to inexperienced cooks.

After some useful hints on the preparation and use of tea, coffee, and cocoa, and a number of excellent recipes for preserves, Mrs. Black passes to the laundry-work; but we have only space to say that her hints on washing and ironing are as useful, practical, and as easy of comprehension as the rest of her book.

She closes with some useful and sensible remarks on Domestic Economy generally.

SEA-SICKNESS.

Sea-Sickness; its Cause, Nature, and Prevention, Without Medicine or Change in Diet. By William H. Hudson. (Boston: S. E. Casino & Co. London: Trübner & Co.) 1883.

This volume is a good example of the labours of an author who has really very little to say, but who takes care that the saying shall make up in bulk what it lacks in importance. Mr. Hudson's theory of sea-sickness might have been stated in half-a-dozen lines, and his whole book might profitably have been condensed to form a small pamphlet. Instead of judicious compression, we find wearisome detail and repetition. Even a chapter of "notes" on "things in general," and treating of subjects (such as life, mind, nerves, muscles, and sleep) which possess only a remote connection with sea-sickness—if they indeed possess any direct relationship at all—is smuggled in towards the close of the volume. The essence of this laboured treatise is to be found in page 35, where the author says: "It will thus be seen that the perfect and only remedy for sea-sickness is relaxation of the muscular system, fully comprehended (*sic*) and diligently practised, until it becomes a habit." All that Mr. Hudson has to tell us is, that having watched sailors accommodating their movements to those of the vessel, he became convinced that the secret of sea-sickness lay in the want of such accommodation in non-seafaring persons.

Sea-sickness, however, is not such a simple matter as our author regards it, nor is its cure so easy as he would have us believe. We know of many cases in which, if his ideas were correct, perfect cures should have followed the attempt to relax the muscles and to "go" with the ship. But the nausea and sickness vanish not, and the apparently hydra-headed affection—as to its cause, at least—remains triumphant and defies all attempts at cure. This volume is an excellent example of the ease with which a small topic or idea may be expanded into forming a book. It also affords an excellent illustration of the aptitude with which a person possessed of "one idea" may entirely ignore all aspects of a case or topic save the special view which he conceives can alone explain difficulties or resolve doubts.

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Messrs. Edwards, Allen, & Kitching, of 50, Holland-street, Blackfriars-road, London, have forwarded us a sample of their "Arabian Revalenta," which appears to be a farinaceous product of high nutritive value, and well adapted as a nutritious and non-stimulating dietary both for invalids and for those who are hale and strong. Our examination of this Revalenta shows that it contains a high percentage of flesh-forming principles, and also of heat-producing elements. Taken with milk, and prepared according to the recipes given by the manufacturers, there is no doubt this food constitutes in itself an economic and sustaining dietary. In the cure of constipation, and in the treatment of dyspepsia, we think the Revalenta of Messrs. Edwards & Co. will be found highly beneficial.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

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All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

ELECTRO-DENTISTRY.

Sir,—It is evident that Mr. Boyd Wallis does not understand anything about the construction of my Electric Dentures. None of the elements he mentions do I employ, neither should I for one moment think of doing so. His idea is to attain a high E.M.F., which is altogether wrong; it is a low continuous E.M.F. that is necessary. Probably the best way of ending this correspondence is to refer Mr. Boyd Wallis for information and instruction to a little work by me (now in the press) entitled "Electricity; its Application to Dentistry," published by Mr. William Colmer, 7, President-street, E.C.—Yours faithfully, J. J. Wedgwood, M.D.

15, George-street, Hanover-square, *Dec.* 11, 1883.

[This correspondence must now cease.—Ed. H.]

SLEEPLESSNESS AND ITS CAUSES.

Sir,—I have seen mention made of the use of tea and coffee as causing sleeplessness; but, judging from myself, there are other articles of food in daily use which do not agree with some people, and especially if taken regularly. I allude to milk, especially sweet milk, and butter. Many people would feel far better if they refused to drink sweet milk, or to take it to puddings or other dessert at dinner. They would also enjoy better health did they cease taking butter for a time. I would suggest that some of

your correspondents who seem to me to complain of evils which look like the results of indigestion, might experiment upon themselves by omitting to use milk or butter for a fortnight or so, and then tell us the effect.

I think it was in HEALTH I read that skim-milk was more suitable for many people than sweet milk, and I find such to suit me best to porridge, and to take only half a teacupful or so. Some of your other correspondents might experiment as to the use and non-use of jellies and jams.—I am, &c.,

PREVENTION BETTER THAN CURE.

QUERIES AND ANSWERS.

[We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.]

[Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

CONSTANCE.—Try the cocoa of Van Houten, or of Tulloch. The latter is a highly pure and nutritious Dutch cocoa.

A. B. C.—See remarks on the Zander Institute, in HEALTH, No. 36, p. 172.

A. THOMSON.—There is no difference between the preparations. One is as good as the other.

G. O.—Write direct to the secretary.

ATLAS.—1. A few have been taken up here, but in America their use is broadcast. 2. Not unattended with danger.

OSCAR.—1. The late Dr. Parkes. 2. An American inventor. 3. Too late for insertion in present No.

J. THWAITE.—1. "Valvular disease" means affection of the valves which regulate the flow of blood through the heart. 2. There are valves in veins and lymphatics, opening towards heart and thoracic duct respectively.

ANTONY.—See reply to "G. O." above.

SANITARY.

THE REV. MR. COLEMAN.—We have made inquiries, but cannot find that the tablets are on sale in London, or elsewhere in England. We should strongly advise you to write to Messrs. Faber, pencil manufacturers, 149, Queen Victoria-street, London, E.C., who will probably be able to inform you if the tablets are to be had here. If not, you must write direct to Pilsen.

E. F. T. BENNETT.—We have received yours, Messrs. S.'s notes, and the burner. We have tried these burners and have been much pleased with them, and have not found the results you have met with. Messrs. S.'s note appears to us to explain the cause of your failure. You must use a burner adapted for the quality of gas. Their offer is fair and candid—to let you have burners if you will inform them of the quality of the gas you burn. There must be some abnormal condition, as in our case the burners please well.

M. H. C.—Write to Mr. Maignen, 22, Great Tower-street, London, E.C., who will send full particulars of his filters, which are eminently adapted for your use. Remember, please, that *all* filters require attention and cleaning. Every filter, whatever its make, is only a dust-bin after all, which requires cleaning regularly and systematically.

J. G.—We are glad you think of adopting the plan set out in Miss Ballin's papers on "How to Clothe Children." The infant's back does not require support, since children should be kept in a reclining position until they sit up of their own accord, which will not be until they are strong enough not to require support. Compression of the navel does harm, not good. People are too anxious to improve upon nature. You may retain the flannel fastened loosely once or twice round the loins during the cold weather, but leave off the roller. Be careful to make the change in your infant's clothing gradually, lest it should take cold.

BEAUCLARION.—Have the ventilator (of the flue) placed at a lower level. A Sherringham valve placed opposite the inlet, if possible, would suit your purpose. Have you tried raising the bottom sash of the window three or four inches, and resting it on a bar of wood, so as to allow air to enter between the two sashes?

MEDICAL.

Y. E.—Through the winter you should try to take more or less regularly the cod-liver oil cream (of Mr. Thomson, chemist, Dublin-street, Edinburgh). This will give you some stamina. Your eye-troubles, &c., arise from a general want of tone. Give up the ointment, and beware of under-feeding. In your case, you cannot afford to go without meat once a day. Don't try foolish food-experimentation when you evidently need a liberal dietary.

VOLENS.—Don't take fluids late at night, and drink potash-water through the day. Take at night for a few alternate nights 15 grains bromide of potass in a wineglassful of water.

ANXIOUS.—No need to be alarmed. Use cold sponging every morning, take moderate open-air exercise, avoid fluids late at night, sleep on a hard mattress, and avoid all sources of irritation. If your general health is low, take for a time a teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily, in a wineglassful of water before meals.

T. L. B.—Custard, rice-pudding, fowl, bread-and-butter, potatoes, cabbage, turnips, &c. Such is the order in general of their digestibility. You should give up all "cakes," &c., as these are indigestible, also salt meats of all kinds. Live on soups, milk, puddings, &c., for a time, and take a little Morson's "Pepsine" with meals.

R. GREEN.—See (and follow) advice to "Anxious" above.

HEADACHE.—You might with advantage try a complete vegetable dietary as an experiment for a time, and make it permanent if it benefits you. See that you live in a well-ventilated atmosphere. Take a little "Æsculap Water" each morning for the constipation and liver. 2. No animal foods necessary in such a case. 3. Yes; potatoes in moderate quantity will do no harm.

E. H. B.—Depends on the source of the colour. We cannot answer definitely, unless you send full particulars of health, habits, illness, &c.

J. MASON.—Possibly only a little irregularity: nothing serious, and probably due to some little irritation which only a consultation with a surgeon can definitely remove. In your case we fancy such a consultation would relieve your mind.

MAY, J.—There must be some constitutional cause for the loosening of the teeth. We should strongly advise, in your case, the taking of cod-liver oil for some time (a dessert-spoonful after meals), and of having a little syrup of iodide of iron (about half a drachm to the ounce of oil) added to the cod oil. This will give your system the tone it evidently needs. The full establishment of your general health should cure your teeth troubles.

G. SEYMOUR.—The differences in "command of the feelings" arise primarily from the constitution of the nervous system. Some persons possess an iron will, perfect command of feelings, indifference to emotion, &c., and others *vice versâ*. Nothing more can be said—except this—that a person in full health is less likely to be troubled with nervous symptoms than one in weak health.

LAYMAN.—No "ganglionic nerves" arise from the back of the head as you put it. Take nourishing soups, milk, &c., and a little meat (mutton or fowl) well cooked; few vegetables, except potatoes, cabbage, &c., and a little *good* claret and water with meals. A little "Pepsine" with the meals may also assist you. By all means apply at an eye hospital, since the spectacles don't seem to do you good.

ROSE VILLA.—You were replied to ("Still Hoping") in HEALTH, No. 36. Letters cannot be answered in the same week as that in which they are received. The case you name should be warned of the evil effects of such a practice. See and follow advice to "Anxious" above.

NINON.—1. Tincture of Benzoin (compound) is "Friar's Balsam;" it is excellent as an application to cuts and sores, and as an inhalation (ten drops in a pint of hot water) for colds. No use for the hands or skin. 2. For the pimples take the lime pills, to be made as follows:—Sulphide of lime, two grains; sugar of milk, forty grains. Divide into twenty pills, and take one every three hours 3. Wrinkles cannot be removed.

SURVIVAL OF THE FITTEST.—A surgeon's aid is certainly necessary. On receipt of a stamped addressed envelope we can send you the address of a good surgeon in London. The operation would be a very simple one.

SLOANE.—We know nothing of the remedy. Why not try the advice given to "Mignon" in No. 35, HEALTH? Glad to help you further, if need be. Catarrh "patent" remedies are, as a rule, useless.

FROST IN THE FOOT.—Simply apply warmth, sleep in warm flannels, let the diet be generous, and avoid all chills. Rubbing with hot oil will also do good.

BERRY.—1. The "blackheads" in your face form the disease known as acne. To treat this affection, squeeze out the "blackheads," which are merely skin-ducts filled with their secretion; then wash the face frequently with soap and hot water, and apply eau-de-cologne or toilet vinegar. The "red wash" (sulphate of zinc, 20 grains; compound tincture of lavender, 2 drachms; and water up to half-a-pint) is also a useful application after the spots

have been pressed out. The general health must also be looked to. 2. See advice to "Anxious" above. 3. Macassar Oil is preferable.

Repentant.—You will never get well if you are so morbidly anxious about yourself. There is no need for such anxiety. Read and follow advice to "Anxious" in present number of Health. If you wish for our advice, you have now got it.

J. Rounnell.—Nothing beyond attention to your general health, and avoiding chills. You may have a weak circulation. Try the effect of a generous dietary, and take a little cod-liver oil after meals for a time to assist you.

Marjoribanks.—You need not be troubled. Take Morson's "Pepsine" with your food; continue the cold baths if you have sufficient reaction; take open-air (walking) exercise; and continue the cod-liver oil. The skin troubles will disappear when your general health is established.

T. Harrison.—Read and follow advice to "Anxious" in present number, and don't be alarmed. You will get quite well in time. For the face pimples try the sulphide of lime pills ordered to "Ninon," in present number.

G. Barker.—See reply to "T. Harrison" above.

Despondency.—See advice to "Anxious" in present number.

T. F. B.—See advice to "T. Harrison" above.

A. Montague.—We do not preserve letters; so please re-state your case. Your letter gives us no clue to your former communication or name under which you were replied to in Health.

H. W. B.—We can only repeat that your state of health is unsatisfactory, and, considering your symptoms, we should advise you to undergo a medical examination. No one, without such examination, can definitely pronounce on the symptoms you name, and such a course, besides, would relieve your mind, we think.

J. M'L.—We cannot promise to preserve your statement for any length of time. Such a course would involve an immense amount of labour and difficulty, were all our correspondents to write at such length as you do. In reply to your queries, we may simply refer you generally to the reply to "Anxious" in present number of Health. You have evidently (under your quack treatment) developed a turn for hypochondria. Give up all moody thoughts, and don't make your troubles (mostly fanciful) the great aim and end of your life. Live plainly and well; take moderate open-air exercise, and, above all, be cheerful, and give up morbid imaginings. For the voice try Lucas' "Bronchial Jelly," and the inhalations recommended to "Mignon" in No. 35, Health, may be tried for coughs and colds. See our article in No. 1, Health, on the care of the teeth. Use camphorated chalk. The quacks gave you the usual report. Such reports never vary—if they were otherwise, quacks' occupation would be gone.

A. B. C. D. E.—The bundle of pamphlets you send are quack ones in the purest sense. When a man puffs a patent medicine and warrants it to cure every disease, he becomes a quack, no less than the man who pretends to cure by faith; or the man who, putting two or three copper discs in a flannel belt, calls it an "electrical" or "magnetic belt," and charges five guineas for the article.

A. Fraser.—Yes; it contains a little quinine, but it is fair to add that many persons who cannot take quinine as ordinarily prescribed, can take the tonic you name with good results.

Sappho.—Not injurious if the child is not too young, and if the exercise is not carried to excess. Watch to see if liability to cough or soreness of the chest or stooping habits are induced; and stop the exercise when any of these symptoms appear. Otherwise there is nothing injurious.

G. S.—Yours is a case in which your mind has become morbid over your troubles, which are, after all, more fancied than real. In all such cases, there is a tendency to magnify the troubles, and you see things through "green spectacles." Try to be cheerful and less morbid. Seek cheerful society, and follow advice to "Anxious" in present number. You cannot expect to be well in a week, so persevere. If not better in, say, a month, write again; but we warn you that your cure must be as much mental as physical in its nature.

R. R.—1. Read Dr. Holmes's "Voice and Voice Production," lately reviewed in Health, and published by Messrs. Chatto & Windus, 214, Piccadilly, London, W., for full information regarding the voice. Price 2s. 6d. 2. We know nothing of the composition of the "Restorer" you name. We prefer "Macassar Oil" as a pure oil. 3. Never heard of "Foseline."

A. J. P.—Take a little "Æsculap" water occasionally in the mornings, and the lime pills ordered to "Ninon," in present No. of Health. If not improved, write again.

Panoptes.—Thanks for all your good wishes. Your symptoms are those of dyspepsia. See to the state of the bowels. Take "Æsculap Mineral Water" occasionally in the mornings as a liver-remedy, and Morson's "Pepsine" with your food. Also let your diet for a time consist of light puddings, fish, milk, light-boiled eggs, &c., and no meat. Give up tea and coffee, and let us hear how you are in a month's time.

J. B. X.—Read and follow advice to "G. S." above.

H. T. W.—Hot salt baths should do you good, say thrice a week. See also advice to "Panoptes" above. If the symptoms continue, see a medical man; but from your account, which is clear enough, you suffer from dyspepsia.

Interrogator.—1. State precisely the nature of the "spasms." 2. See well to the ventilation of your chimney or stove, and there can be no danger.

Miss Rose.—No remedy beyond taking great care of your general health. Clothe warmly, and take care of your digestion especially. Possibly, if it agrees with you, a teaspoonful of cod-liver oil emulsion taken twice or thrice daily would do you good.

C. S. M.—The sea voyage would do you most good—say to Australia or New Zealand. Hot salt baths are useful also. See also notice regarding digestive troubles given to "Panoptes" above.

W. Allen.—The person you consulted is a notorious quack. See and follow advice to "Anxious" in present number.

Viridis.—At your age we should not advise you to trouble much with medicine. Be generous to yourself in the matter of food, clothe warmly, and rest as much as possible. Your diet should also be light—milk, eggs, puddings, fish, soups, &c.

Wormeaten.—State the nature, appearance, &c., of the worms.

M. S.—We do not approve of such pamphlets, advertising as they do secret and mysterious remedies. It seems the "cures" are "faith cures" as much as anything else.

William II.—Nothing but a dye of one kind or another can accomplish what you wish. Simple oil (*e.g.*, Macassar Oil) will darken the hair somewhat without changing its hue. Read our papers on the "Hair" in the early parts of Health.

Great Toe.—Rest must be your chief cure. Possibly a mild blister or cold-water bandaging would do you good. But as the affection from which you suffer *may* depend on some constitutional trouble, you should see a physician, who may prescribe some internal remedy.

W. Martin.—You are an impatient correspondent. Ask your hairdresser what is the special good of singeing over cutting? There is no evidence (known to hair specialists) which establishes the advantage of singeing the hair. Restate your hair troubles—we do not preserve letters.

Incisor.—We prefer simple camphorated chalk or magnesia as a tooth-powder. Use it morning and night, with a medium brush as to hardness. No fluid tooth-washes or pastes are of real service in cleansing the teeth from tartar, &c. You must use a powder.

A Poor Man.—1. For piles, attend carefully to your diet, and avoid constipation above all. Take "Æsculap" water occasionally in the mornings; but a vegetable dietary may enable you to avoid the necessity for aperient medicines. 2. Get an ounce of the strong tincture of hamamelis, and put a teaspoonful of this tincture into an eight-ounce bottle of water, and take a teaspoonful of this mixture every three hours when the piles are troublesome. Then apply also a lotion of the tincture externally to the parts, such a lotion being made by adding two teaspoonfuls of the tincture to half a pint of water. The lotion should be applied on lint and renewed three or four times daily. Many chemists make an ointment of hamamelis, which is a useful application in place of the lotion.

An Actor.—Live plainly, food to be generous, no stimulants; don't overdo exercise, rest is necessary; vegetable dietary as an aperient; cod-liver oil, with syrup of iodide of iron added, might be taken occasionally; but the following should be taken for a tonic, and occasionally at intervals:—iodide of potass 2 drachms, infusion of calumba 6 ounces; a dessert-spoonful thrice daily. For the throat (when sore), use a lotion or gargle composed of biborate of soda 1 drachm, and glycerine 2 ounces.

Anxiety.—Under all the circumstances, we think the patient should see a physician, who may do much to relieve her state. We shall be glad to send you address of a reliable physician in London, on receipt of stamped addressed envelope. The case is one for examination and advice.

J. J. O.—Be very careful to avoid all irritation in the shape of stimulating or heating foods: the affection is probably caused by some error in diet. Give up all stimulants. Take an aperient (*e.g.*, "Friedrichshall" or "Æsculap" water) and the following tonic:—Citrate of iron and quinine a drachm and a half, carbonate of ammonia 2 drachms, tincture of orange-peel 2 ounces, water to make up 6 ounces. A dessertspoonful thrice daily. Apply locally a lotion comprised of bicarbonate of soda one drachm, and glycerine an ounce and a half. Let us hear how you are after a trial of this advice.

Wearied Out.—1. For lice in children's heads try carbolic oil (one part of carbolic acid to eight of oil). Strict cleanliness is necessary,

[*Continued on page* 192.

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of course. The nits or eggs are best got rid of by washing the hair with vinegar and water, and then with plain water. If not successful, write again. You must wash their heads more frequently than once a week. 2. Plain cold water, or luke-warm milk and water for the eyes.

Nil Desperandum.—You are constitutionally nervous, but your symptoms are probably increased by a low state of health. See to your digestion: take "Pepsine" with your food, and try for a time the tonic recommended to "Anxious" in present number of Health. Let your food be very light (but nourishing) for a time.

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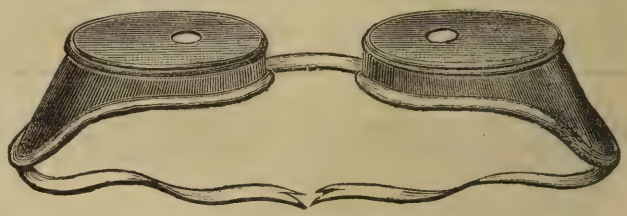

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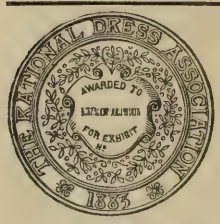

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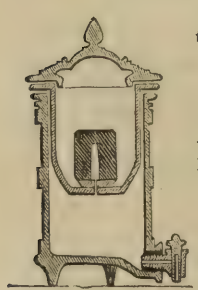

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, DECEMBER* 28, 1883.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

It may not be inappropriate if, in concluding the Old Year, we refer to the prospective arrangements connected with the programme of Health in 1884. Adhering strictly to the lines on which the journal has hitherto been conducted—namely, those of uniting sound instruction in health-science and sanitary laws to details which are interesting and useful to all—we anticipate presenting our readers with a programme in which the varied features of Health will be even more fully extended than in its past career. Each of the departments under which our topics have from week to week been treated will receive original contributions by writers well known in connection with the subjects with which they deal. Amongst the features of Health for 1884 will be comprised "Our Ambulance Lectures," fully illustrated, and written by the Editor, assisted by various physicians and surgeons. These papers, dealing with the treatment of emergencies, and showing how the public may render "first aid" to the wounded and injured, will prove useful as an educative basis for teaching the plain and simple details of home-medicine to old and young alike. Mrs. Thwaites, of the Liverpool School of Cookery, will contribute a series of papers on "Cookery and Foods in Relation to Health." Such articles will be thoroughly appreciated, we believe, in every home, and will teem with information of directly useful kind.

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Arrangements have also been made for the publication in our pages of a series of papers on popular science, by Dr. Riches. These articles will deal with such topics as Sound, Light, Heat, Air, &c., in relation to the senses, and to health topics. They will thus continue under a new aspect the papers on "The Body and its Structure," which have already appeared; while special articles in direct continuance of the papers on anatomy and physiology will be duly written for Health by Mr. Manson, Mr. Clarke, B.Sc., the Editor, and others. A series of papers on "Home Exercises and Calisthenics" has been promised us by Mr. H. C. Standage, for the "Recreation" page; while Mr. G. Chisholm, M.A. B.Sc., will deal in early numbers with the all-important topic of "Examinations in their Relation to Health"; Dr. Baird's papers on "Infancy"; those of Dr. Chapman on the "Common Ailments of Children"; and Dr. Drinkwater's articles on "Foods and Food-Adulteration" will also appear in due course. Miss Ballin will write articles on "Children's Food" and allied topics; while our contributors, Drs. Stone, Foster, Cathcart, Nasmyth, and Ross, and other writers, have also promised a continuance of their welcome aid. The Editor contributes to early numbers a series of papers on "The Brain and Its Work," and it may be added that the "Original Essays" will deal, as heretofore, with whatever topics of special interest the times bring round.

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With this large and varied programme before us, we have every confidence in again asking the kind co-operation of our readers in still further extending the circulation of Health. It shall be our constant endeavour to make the journal a source of sound and reliable information, popularly imparted and plainly detailed. As a "family friend" and consulting medium on all matters pertaining to health, we have reason to believe this journal has already acquired a firm footing; and we ask those who have found in Health either profit or pleasure, or both, to commend our efforts to the notice of their neighbours and friends.

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We are glad to observe that the "Edinburgh Health Lectures" for the present year—the fourth series—are once more being published by Messrs. Macniven & Wallace, of that city. We commend to the notice of all interested in ambulance-work, and in health-instruction at large, the opening lecture by Professor Chiene, of Edinburgh, on "Civic Sanitation."

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The "Manchester Health Lectures" are being published by Mr. John Heywood, as before. Dr. Ransome's lecture on "Breathing," forming the first of the series for 1883-84, is a capital exposition of the great purifying function of our frames. The lecturer, in a singularly happy fashion, shows the value of pure air, and the danger of the "breath re-breathed."

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We beg to draw attention to the "Department of Hygiene and Public Health" of University College, London, under the able supervision of Professor Corfield and Mr. C. E. Cassal. Those who desire a complete course of instruction in sanitary science, and in all the details of personal and public health, will find Dr. Corfield's course an admirable means for acquiring such culture. The "General Course" is given on Tuesday and Thursday, from 4 to 5, during the summer session, beginning in May; while the laboratory is open daily from 9 to 4 from October to the end of the summer session.

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A full and complete reply to the arguments which maintain that the cry of educational "overwork" is exaggerated and needless will be found in a pamphlet by Mr. Teale, of Leeds (published by Messrs. Simpkin, Marshall, & Co., London), entitled "Hurry, Worry, and Money—the bane of Modern Education." Mr. Teale, who, from his high position as a medical authority, is fully entitled "to speak with power," adduces unanswerable arguments to show that we are in danger of becoming "examination-mad" in these latter days, and that our only hope of fulfilling the ends and aims of true education is to throw "cram" to the winds. We commend Mr. Teale's pamphlet to the notice of every teacher and parent.

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Referring to our remarks in last week's Health on Dr. Mortimer Granville's contention that the use of night-caps is to be commended, a medical friend writes that as the brain is supplied with blood by different blood-vessels to those which nourish the scalp, it is difficult to see how cold or warmth, of the slight degree prevented or induced by the night-cap, can so seriously affect the brain as is

maintained by the medical authority just named. It is true, however, that the effect of cold on the blood-vessels of the scalp might also be represented in those of the brain; but as this is a result which is likely to accrue every time a hat is removed, the chances of its doing harm are seen to be practically of none effect. Dr. Granville's "night-cap theory," will not, we are afraid, stand scientific criticism. This much, at least, is certain, that there are thousands of persons who exhibit the most perfect health, and who have been innocent of night-caps from infancy upwards.

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The "English Spelling Reform Association," 8, John-street, Adelphi, London, has issued a circular protesting against "the intricacies of English spelling," and advocating the simplification of the present method of constructing words as a means of advance in education. There certainly seems room for reform in this direction, but alteration in the spelling of words is a rather serious matter. It seems doubtful if the work at which the association aims can ever be successfully carried out by English-speaking nations at large, although everyone must feel a pang of sympathy for children in their spelling lessons, as for the foreigner of the story, who, puzzled with the varied sounds of the terminal "ough" in English, rendered, naturally enough, the words "the earth being so tough, the plough could not get through," as "the earth being so tough the *pluff* could not get *thruff*."

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Some discussion has taken place between Dr. Allchin and Mr. John Angell, of Manchester, regarding the value of physiology as an educational subject. Dr. Allchin expressed the idea that physiology was valueless as a subject of elementary education. He founded his ideas, we believe, on the hopelessness of teaching the facts of science in a sufficiently clear fashion to the young. Mr. Angell, who is Science Master in Manchester Grammar School, took the opposite view, and in a paper read before the College of Preceptors (and published in the *Educational Times* for Dec. 1, 1883), combatted with great vigour Dr. Allchin's opinions. Only those who have taught physiology to boys and girls can speak with authority on this subject; and, as we have before shown in Health, we maintain as a sound opinion, that it is possible to teach an intelligent boy or girl, by aid of abundant illustration, all the broad facts of bodily structure and function that bear on ordinary health-questions.

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We repeat that we have never found the slightest difficulty in obtaining evidence, after strict examination, that lads and lasses may learn very thoroughly as much of the structure of the body and as much knowledge of its functions as fits them for understanding clearly and intelligently such vital matters as the nature of breathing, the nature of foods and digestion, the circulation of the blood, the work of the muscles, &c. If Dr. Allchin's views were correct, we might at once give up health-lectures, and every other form of popular scientific instruction. Boys and girls are naturally interested in science; and they are by no means so stupid, nor are teachers so unsuccessful as physiological teachers, as Dr. Allchin would have us believe.

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Dr. Andrew Wilson's second lecture at Princes' Hall, Piccadilly, London, will be given on Monday night, December 31, at 8 p.m. Subject: "How We Move—Joints and Muscles." His third lecture, on "The Heart," will be given on Wednesday evening, Jan. 2, 1884, at 8 p.m.; and his fourth and last lecture, on "Brain and Nerves," on the evening of Saturday, Jan. 5, 1884.

Original Essays

"Life is not to live, but to be well."—*Martial.*

SCIENCE AND CRIME.

THIRD PAPER.

One of the most celebrated cases in which the aid of science proved of the utmost help in settling a question of identity, and in tracing a crime home to its author, was that of Dr. Parkman, of Boston, U.S. This gentleman, a physician of standing, was traced, on Nov. 23, 1849, to the laboratory of a Professor Webster, a lecturer on chemistry, of that city. Thereafter, all traces of Dr. Parkman were lost, and the excitement regarding his fate became intense. It would appear that certain pecuniary transactions had taken place between the two persons just named, that Webster was considerably in Parkman's debt, and was, moreover, in embarrassed circumstances. On Webster's laboratory and its precincts being searched, the haunch-bones, the right thigh, and the left leg of a human body were discovered. Associated with these remains, were several laboratory towels bearing Webster's name. In the refuse and slag of a chemical furnace, were found fragments of bones of the skull and of the spine-bones, along with the blocks of artificial teeth and a little melted gold. A further search in the laboratory, brought to light a tea-chest in which, disposed among tan, and covered over with mineral matters, the trunk of a human body along with the left thigh were contained. These latter parts and the remains previously discovered were found to belong to one and the same body. Pieced together, these relics showed that they formed part of a body of which the head, arms and hands, both feet, and the right leg from the knee to the ankle were missing, but which at the same time corresponded with the frame of the missing man in every particular. Dr. Parkman, at the time of his disappearance, was sixty years of age. The examination of the skeleton pointed to its being the remains of a man of about the age referred to. Parkman's height was 5 ft. 11 in., and the skeleton pieced out and proportionately measured was found to indicate a height of 5 ft. 10½ in. In these points, therefore, the identity of the remains seemed to be clearly shown.

But, as in the case of Caroline Walsh, there were special points in Dr. Parkman's case which served to place the identification well-nigh beyond a doubt. It was quite evident that an attempt to destroy the head by fire had not only been made, but had well-nigh succeeded. The evidence of Dr. Keep, the missing man's dentist, came to the rescue in a very remarkable fashion, after an examination of the remains of the artificial teeth which had escaped the action of Webster's furnace. Keep's evidence was, that four years before the disappearance of Dr. Parkman, he fitted artificial teeth in blocks for that gentleman in both upper and lower jaws. The dentist could also speak with certainty to seeing these teeth in Dr. Parkman's mouth about a fortnight before his disappearance, when he had fitted the teeth with a new spring. The artificial teeth rescued from Webster's furnace were sworn to by Keep as those he had made for Dr. Parkman from their fitting the moulds in which the teeth of the latter had been made, and from peculiarities of make. The left side of the lower jaw of Dr. Parkman exhibited a certain irregularity, which was recognised by Keep in the form of the gold plates recovered from the furnace of Webster. Other circumstances combined to weave the evidence strongly around the latter as the perpetrator of a heinous crime. That the remains had not been used

for anatomical purposes, was abundantly proven by medical evidence; and that murder had been committed, was evident from an examination of the chest, which revealed a wound on the left side. Webster was duly convicted by a chain of circumstantial evidence of the most complete kind, and was executed. As an eminent authority in matters medico-legal has remarked on the Parkman tragedy, even the refinements and appliances of science may fail in the attempt to destroy a body, or so to mutilate it as to prevent its identification.

In 1814, one Auguste Dautun was murdered in Paris by his brother. Next day some boatmen found a human head in the Seine, while other parts of a body were found in different places on the same day. The question of identity arose as usual. Dautun was known to have been lame, one leg being shorter than the other. After a prolonged examination of the relics, the medical examiners testified that, when a child, the man must have had hip-joint disease of both sides. The study of the bones further showed that the disease had left a high degree of deformity, so that the individual whose remains were thus found, must have walked in a peculiarly contorted manner. The right limb was found to be shorter than the left, and the whole examination of the remains pointed clearly enough to the identity of the murdered man with Dautun. The presence of a wart on the face also assisted the examiners and police in their identification of the body. In the famous Greenacre case of 1837, wherein a woman, Brown, was murdered by Greenacre, and wherein various parts of the body were found at different times and in different parts of London, the fragments, when pieced together, were found to fit and to correspond in the most exact manner.

The more recent Wainwright case (1875) showed how patiently and skilfully a murderer might be tracked through the investigations of medical science. Here, the alleged victim had disappeared a year previous to the discovery of the crime. When the mutilated body was discovered in Wainwright's possession, it became necessary to show some relation in nature between the remains and the appearance, age, stature, &c., of the alleged victim, Harriet Lane. The body was partly converted into the *adipocere* mentioned in a previous article; but the medical evidence showed that it was that of a woman about five feet high and about twenty-five years of age; while other circumstances, fully investigated by the examiners, tended to bring the crime home to the prisoner, after a long and most complicated trial. After being eleven years buried, the body of a widow, Honet, was exhumed for legal purposes in France, and was duly identified. It was reduced to a skeleton; but the identity of the body was assured from the medical examination testifying to the age, height, &c., of the deceased; while a small ring, "carved in facets," which still remained on the finger-bones, added another link to the chain of evidence against a criminal.

As in the case of Dautun, peculiarities of the bones often serve as important and trustworthy means of identification. A twisted spine and deformed leg-bones served to identify a body after three years' disappearance.

In the course of the investigation of a body found buried in a sea-beach, the medical examiners discovered that the lower portion of the spine was diseased, and from the nature of the lesion they were enabled to state that the individual in question must have walked with a marked peculiarity of gait. This clue, patiently followed up, showed that the skeleton was that of a carter, who had been deformed, and who was buried at night in the sand by his friends to avoid the chances of his body being stolen for anatomical purposes by the "resurrectionists" of his day. A similar case is related by Orfila, the celebrated continental expert, in which a man named Bonino, residing near Montpellier, suddenly disappeared in 1823. In 1826 certain suspicions attaching to the disappearance induced the authorities to examine the garden of one Dimont, with the result of discovering the bones of a human body. Bonino was well known to have laboured under a six-fingered deformity in the right hand, and to have possessed six toes on the left foot. The two smaller toes of the left foot were missing in the otherwise perfect skeleton; but on the fifth toe a surface or hollow, to which an additional toe could have been attached, was plainly discernible. In the right hand the bones of the sixth finger were absent, but the palm-bone supporting the little finger exhibited the appearance of having given support to an extra digit. The left hand and right foot were complete and entire. This evidence, supported by collateral circumstances, told against Dimont and a woman, his partner in the crime, and both suffered the extreme penalty of the law.

A list of cases in which medical science, aided by the practised and trained common sense of experts, has elucidated many of the apparently inexplicable problems and mysteries of crime, might be indefinitely prolonged. But it may be remarked that not merely in the case of lost and missing persons does the knowledge of the expert aid the cause of justice. It may happen that in cases involving the identification of the living, the final appeal is made to the medical jurist and to scientific knowledge, in deciding upon the changes of structure or appearance which may accompany and mark the varying epochs of human life. Cases have been recorded in which the examination or mere detection of a scar has settled the vexed question of identity, and has freed an innocent man from the perils of unmerited punishment. Such an instance occurred at the Old Bailey in 1834. A man, believed to possess the name of Stuart, was charged with being a returned convict, and with having escaped from transportation. Evidence was given that in 1817 a person of that name was convicted and sentenced. The governor of the gaol in which the convict Stuart was confined, testified to the identity of the prisoner at the bar with the convict, and no less certain was the guard of the convict-hulk to which Stuart was consigned that the Old Bailey prisoner was his former charge. Cross-examined on behalf of the prisoner, the guard admitted that the convict Stuart in 1817 possessed a wen on his left hand, and, indeed, this peculiarity was duly entered in the convict records as a distinctive mark of the person in question. In answer to the charge preferred against him, the prisoner stated that he was not the convict Stuart, and that his name was Stipler. Between 1817 and 1834, however, witnesses who might have testified to the truth of his statement had disappeared, and were not forthcoming for the defence. Already the Recorder was prepared to charge the jury, when a singular, and, for the prisoner most fortunate, incident occurred. A celebrated surgeon of the day, Mr. Carpue, happened to be seated in Court during the trial of the alleged Stuart. Struck with the evidence of the guard of the convict-hulk regarding the presence of a well-marked wen or tumour on the convict's hand, it occurred to Mr. Carpue that this fact could be turned to advantage in the cause of justice. Hurriedly consulting with the counsel for the defence, Mr. Carpue entered the witness-box. He testified, as a surgeon, that the removal of such a wen would entail the presence of an indelible scar as the result of the operation. If the prisoner were Stuart the convict, argued the counsel, either the wen or the scar should be found on his left hand. Both hands of the prisoner

were found to be free from wens and from scars alike, whereupon the jury at once acquitted him. In this case, a chance accident and the acuteness of the surgeon may be said to have saved an innocent man from a lengthened period of incarceration.

The well-known case of Joseph Lesurques, whose misfortune forms the incident on which more than one melodrama and novel has been founded, has recently been brought anew under public notice through Mr. Henry Irving's performance in the "Lyons Mail," and his assumption of the dual *rôle* of Lesurques and his villanous double. The case actually occurred in France in 1794, and its details are sufficiently well known to obviate the necessity for their repetition here. Charged with robbery and murder, the innocent Lesurques was recognised, identified, and sworn to, as the real culprit by various disinterested witnesses. Notwithstanding strong exertions which were made to save his life, and despite his previous high moral character and probity of conduct, Lesurques was sentenced to death and executed. Soon afterwards, the real culprit, a man, Dubosc, who bore the closest possible likeness to Lesurques, was brought to justice. It was then seen that the similarity in features, stature, build, and manner was so close as to have deceived the witnesses who gave evidence at the trial. On these grounds alone, and as a matter of common recognition and identification, the unfortunate resemblance of Lesurques to the real culprit had unwittingly led them into a "Comedy of Errors," which resulted in a legal tragedy as its *dénouement*. But more extraordinary to relate still is the incident, well-nigh unparalleled in the annals of coincidences, that *Lesurques was marked by a scar on the forehead, and by another on the hand, whilst the real criminal, Dubosc, likewise possessed similar markings.* Surely "the grim irony of Fate" could no further go than this, in causing chance likeness to assume a form and to entail consequences so fatal and sad as in the case of Joseph Lesurques.

COTTAGE HOSPITALS.

THEIR FURNISHING.

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

SEVENTH AND CONCLUDING PAPER.

The nursing arrangements will require the exercise of great circumspection. In a Cottage Hospital with no resident medical officer the nurse will require to be equal to any sudden emergency, and to have sufficient strength of character to act oftentimes on her own responsibility. There is no superintendent; she will therefore need to be a woman of methodical habits. There is no housekeeper, and on this account she must be able to attend to household duties. It is clear that the nurse of a Cottage Hospital has to fill a post of great importance and to perform duties entailing the exercise of considerable powers of mind and will.

In England the nursing arrangements of several large general hospitals are in the hands of sisterhoods; and the question has been raised whether the nursing of Cottage Hospitals should or should not be entrusted to similar associations. The advantages of such a system are but few—the objections very numerous. The presence of any member of a sisterhood in a cottage hospital would destroy its special character, import an ecclesiastical element apt to engender strife; and, if the garb be like that of a certain Church hospital in London, its wearers would seem, in the patients' eyes, like ushers of the King of Terrors. Such are a few of the lines of argument against sisterhoods as nursing institutions; and, in leaving the subject, we would quote Miss Nightingale's appropriate words:—"Take it which way you will, the idea of the religious order is always more or less to prepare the sick for death; of the secular, to restore them to life, and their nursing will be accordingly."

The question must be put, "What are suitable cases for admission?" The great rule must be *that no infectious cases are to be allowed into the hospital on any pretext whatever;* next in importance, and of almost equal weight, is another—that no obstetric (*i.e.* midwifery) cases be admitted. Deviation from the former regulation may cause the loss of useful lives; neglect of the latter may rob a home of its happiness, and leave a widower and motherless children. We were recently alarmed by a rumour that the people of a busy Scottish town, which is as well known for its manufacturing triumphs as for its staunch adherence to progressive views, proposed to erect a small hospital to accommodate medical, surgical, obstetric, and infectious cases. We shall not reveal the name or neighbourhood of this town, as we do not desire to make the proposers of this idea a scientific laughing-stock; but we would beg their attention, if Health should ever be read by them, to some wise and grave words of Mr. Simon, who says "that the deaths which occur in this country are fully a third more numerous than they would be if our existing knowledge of the chief causes of disease were reasonably well applied throughout the country; that of deaths, which in this sense may be called preventable, the average yearly number in England and Wales is about 120,000; and that of the 120,000 cases of preventable suffering which thus in every year attain their final place in the death-register, each unit represents a larger or smaller group of other cases in which preventable disease not ending in death, though often of far-reaching ill effects on life, has been suffered. And while these vast quantities of needless animal suffering, if regarded merely as such, would be matter for indignant human protest, it further has to be remembered as of legislative concern, that the physical strength of a people is an essential and main factor of national prosperity; that disease, so far as it affects the workers of the population, is in direct antagonism to industry, and that disease, which affects the growing and reproductive parts of a population, must also in part be regarded as tending to the deterioration of the race."

This leads us to make one or two remarks upon what has been called "Hospitalism." It is a well-known fact that in the larger town hospitals the mortality after the greater operations is considerably higher than in the smaller country hospitals. We cannot stay to investigate the causes of this difference, but, although we cannot claim for ourselves that we are devout believers in bare statistics, it is only fair to let the reader have the percentages of death in the two sets of hospitals after *all* amputations. In England generally, in the large general hospitals the mortality has been 41·6 per cent.; in Scotland, 38·7 per cent.; and in Paris, 58·8 per cent.; giving an average mortality of 49·7 per cent. In the Cottage Hospitals, on the other hand, 61 in number, with a total number of 326 amputations on record, there have been 58 deaths, or 17 per cent. The only remark we shall make upon these statistics is that while the figures referring to the larger

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hospitals are taken in some instances, at least, from the records of more than a century, the figures representing the mortality of the Cottage-Hospitals belong to the last twenty-five years only. The surgery of to-day is not quite the same thing as that of a hundred years ago, and this may to a certain extent account for the difference in results, but not for nearly all. Any reader who wishes full information on this aspect of hospital experience will find ample material for careful reading and reflection in the writings of Sir James Simpson, Mr. Erichsen, and Mr. Burdett.

Before taking leave of our subject we would once more return to and strongly urge the point of making the Cottage Hospital as homelike as possible. The relations and friends of the patients should be allowed to visit them as freely as is consistent with their condition of health. The inmates should be encouraged to every form of innocent amusement, and the men must be allowed to smoke if they are, as is probable, votaries of the Virginian weed.

Judging from the extent to which the Cottage Hospital movement has grown in the last five-and-twenty years there is no reason to doubt its continuous increase, and most certainly among the many schemes of usefulness which engage the attention of the benevolent none deserves their sympathy and help more than the erection and support of Cottage Hospitals.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

TENTH PAPER.

Before commencing the *treatment* about to be recommended, the medical man should, as already insisted on, be quite sure of the vital capacity of the individual to adopt the plan during such time as may be necessary to produce a permanent change in the fat-forming power of the patient, or, in some cases, for life. He should not attempt any rash or hurried treatment, as this is sure to lead to ill results, and may even be fatal. He will be guided by the age, sex, constitution, and past history of the individual, and must satisfy himself that the power of the heart and the functions of the great excretory organs (or those which get rid of waste—lungs, skin, and kidneys) are in good condition. The patient should be weighed each week, and the practitioner must be alive to the fact that though patients are losing fat sufficiently quickly, still their weight may not sensibly diminish in the early period of treatment, because, as the muscles acquire tone and solidity, they will, to some extent, compensate in weight for the loss of weight in fat.

If the plan recommended be judiciously applied, its beneficial results are quickly apparent, and the individuals soon declare themselves to feel different beings, which they actually are becoming. The chief objects he will aim at are to treat each case on its merits and according to its circumstances and requirements; and if he has seen much of hospital practice, he cannot fail to be struck with the comparative rarity of obesity among the poor, while it is common among the middle and upper classes, so that two important factors in the production of obesity are at once made clear to him—viz., too much and too rich food, and too little exercise, neither of which is it in the power of the poor to procure. Every one must have observed how very rare it is to find a fat soldier or sailor,* and doubtless there are predisposed individuals in the thousands who make up the rank and file of our army and navy. This proves that moderation in the quantity of food, combined with regular exercise, are the important factors in keeping good bodily proportions.

The diet of the patient is a very essential part of the treatment, thought it alone cannot, as far as my experience guides me, be relied on, and one is obliged to call in the aid of surgical and medical means. The dietary which I recommend *differs entirely* from that of all previous writers. I allow, according to the condition of the patient, anything and everything, but I limit it in *quantity* according to circumstances. All previous writers have debarred certain articles; but I see no necessity for this—rather the reverse, as people soon tire of the monotony of specific articles of food, so that the treatment has to be abandoned. The quantity should be sufficient for healthy sustenance of the body, and this will vary in different individuals. The diet must be *mixed*, though those articles known to favour the production of fat should, of course, be allowed in limited quantities, which can only be arrived at by accurate observation of each individual undergoing the treatment. It will be found that one particular article of food—say, for instance, potatoes—will agree with one person, *i.e.*, will not make him fatter, while it will disagree with another; and the explanation of this must reside in some peculiarity of the chemistry of this individual's digestive process. Matters like these are only learned by observation and experience, and it is useless to write down any hard and fast rules on the matter. But, as it is necessary to show the lines on which I guide the dietetic treatment, I will formulate a dietary as follows, premising that I wish it to be clearly understood that only small quantities, just sufficient for bodily sustenance, are to be taken at each meal, and that the breakfast and dinner may be partaken of on a more liberal scale, proportionately, than the lunch. Every fat person should leave off eating before he or she feels satisfied; and this, by the way, is a good rule for average folk who wish to preserve their digestion and have a healthy appetite for the ensuing meal.

The patient should be allowed three meals daily, viz., breakfast, lunch, and dinner, or, if dinner be the mid-day meal, the supper should be taken at eight o'clock. If work requiring much use of the brain and a clear head has to be done, the breakfast and lunch must be moderate. The golden rule for fat people is only to half-satisfy their appetites, and to leave off when feeling as if more could be taken. They should commence by taking half the quantity they have been accustomed to take, and in ordinary cases habit will soon render this limited quantity agreeable.

* Fat policemen are not uncommon sights—a result due to the lack of *active exercise* which prevails as a rule in the force.—[Ed.H.]

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HOW TO KEEP WARM.

By Philip Foster, M.D.

(Author of "What to Do in Accidents and Sudden Illness," &c. &c.)

Upon a due maintenance of the heat of the body not only our health and comfort, but also our freedom from disease and length of life in a great measure depend. In accordance with the law of radiation, whenever the surrounding atmosphere is of a lower temperature than ourselves, which is usually the case in England, we give off heat. Evaporation, or the conversion of fluid into vapour, which is constantly taking place on the surface of the body, although in cold weather we are not sensible of the fact that we perspire, is also attended with loss of heat. As there are two ways in which heat is lost, so are there two in which warmth may be promoted. One is by increasing the amount of heat produced; the other by limiting its escape.

The generation of heat by the body is almost entirely due to chemical changes going on within it, and depends upon the quantity and character of the food taken, the exercise undergone, and the state of the health. The fact that milk, the food provided for us by nature, contains an excess of the heat-producing elements, carbon and hydrogen, which, by combining with the oxygen taken into the body by the lungs, develop heat, shows us that keeping the body warm is really a more formidable work than nourishing it, and that a highly nutritious diet is a bad diet. Fat, butter, olive and other oils, the fatty matter in the different grains and legumes, sugar, sago, arrowroot, tapioca, and the starch contained in wheaten and other flour, in rice, potatoes, and the like, are hydrocarbon compounds, or fuel food, and the colder the weather the more are they required, and the more freely should they be consumed. The following table shows how far the different classes of food are capable of meeting this need :—

Table.

The figures represent the number of parts to the hundred the remaining parts being water : —

	Flesh-formers.	Heat-producers.	Minerals.
Beef	19	12	4
Peas (dry)	23	60	3
Oatmeal	16	69	3
Fish	14	7	1
Flour	11	69	1
Rice	7	91	1
Milk	4	8	1
Potatoes	2	23	1
Carrots	1	12	1

Malt, owing to the presence in it of diastase, is capable of digesting starch, and therefore the various malted foods which have recently been introduced may be taken with advantage by persons who experience difficulty in maintaining their animal heat. The saliva has been supplied to us for this important purpose, and should not be wasted by expectoration. Spices, by stimulating the system and increasing vital action, cause development of heat. Hot drinks, of course, add directly to the heat of the body. Exercise is a most important heat-factor—by increasing the breathing, it causes more oxygen to be carried into the body for the carbon and hydrogen to combine with; by improving the appetite, digestion, and assimilation, it increases the quantity of food appropriated, that is, converted into blood; by causing the vital functions to be carried on more vigorously, it increases chemical action, upon which the generation of heat depends; and it also causes the blood to circulate more powerfully and rapidly. And, lastly, the more perfect the health, the more actively are all the processes of life performed, and consequently the greater the heat produced. For advice on the promotion of health, I beg to refer the reader to my article on "Beauty-Culture," and to other papers in these columns.

Heat-escape may be lessened by covering the body with a non-conductor, and by raising the temperature of the surrounding atmosphere. Let it be distinctly understood that clothes, of whatever material composed, cannot impart heat. All they can do is to prevent that generated within the body leaving it. They keep us warm in precisely the same way as a sunshade keeps us cool. Some materials do not allow heat to pass so rapidly through them as others, and therefore are said to be warmer. Wool is the best non-conductor of all the articles used for clothing, and persons who feel the cold much should not wear anything else. Paper is also an excellent non-conductor, and may be utilised as such when nothing else is at hand.

An ordinary coal fire, although it looks bright and cheerful, is both a dear and inefficient method of raising the atmospheric temperature, for a great part of the heat goes up the chimney while we roast on one side and shiver with cold on the other. The expense is slightly, but not materially, reduced—at least, so I am informed—by the use of a slow-combustion range. Any range may be made into a slow-combustion one by putting a solid bottom into it, or by placing a shield between the lowest bar and the hearth. Verity's patent gas fire has exactly the appearance of a bright coal fire, but, although a convenient, it is a somewhat costly substitute for it. It consists of lumps of mineral kept at a red heat by gas jets. A good draught is an essential condition, for if there be the least down-draught, the vapours from the gas, which are of a very unwholesome character, will be driven into the room.

All stoves without chimneys are objectionable. Heating the air as it enters a building is the cheapest and best mode of warming it. A single room, or a whole house, may be heated in this way. The apparatus is inexpensive, easily fixed, and may be made to burn coal, gas, petroleum, or any other fuel. The advantages secured are—freedom from draughts; air not burnt, and consequently neither robbed of its oxygen or loaded with the foul products of combustion; an equal, or nearly equal, degree of warmth in every part of the room; great saving of trouble; absence of smoke and dirt; and economy in fuel.

These, then, are the means with which nature has furnished us for resisting cold; and the severities of an arctic winter may be, and have been, endured by their aid. I may here, perhaps, be permitted to observe, although it has no direct connection with my subject, that an extremely high temperature is, to a certain extent, its own remedy, for the excessive perspiration induced by it is attended with a proportionate loss of heat. My next paper will be on the kindred subject of "Colds."

"Lochinvar" Old Scotch Whisky.—For invalids who are ordered whisky, or for those who use this valuable spirit to promote and aid digestion, it is important that the whisky *be well matured by age.* The "Lochinvar" is a blend of the finest Highland whiskies, and is *guaranteed five years old.* Sold by all wine merchants. Wholesale only of Hills & Underwood, Eastcheap, London.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

Care of Tooth-Brushes.—If dealers will call the attention of customers to the following rules for the use of brushes, complaint will not be made about their wearing qualities:—*Directions for using tooth-brushes:* Tap the brush before using it, to see if you can jerk out any loose bristles. Tap the brush after using it, to shake out the water, and put it away fairly dry. Do not keep it closely shut up in a brush-tray or dressing-bag bottle. *Cause of Complaint.*—Loose bristles may be found in a new brush in consequence of the wire having cut the bristles in half while drawing them into the hole, the knot being too full. Bristles may project beyond the level of the serge, the knot being too slack; clip them off; do not withdraw them, and thereby make the knot still more slack. Bristles will perish if brushes are put away thoroughly wet, and left for days to get thoroughly dry; after a time, even with the greatest care, this will happen. Brushes will smell offensively if closely shut up when wet; they will also become discoloured. Tooth-brushes will wear out in course of time; some people use them for months, while some will cut them down very quickly, thus:—Teeth with sharp edges cut bristles. Teeth with irregular spaces will catch individual bristles and forcibly withdraw them. Some people select a brush too soft for their requirement, and make it harder by pressure, breaking down the bristles, which they would not do if their brush was sufficiently hard. A tooth-brush being an inexpensive article, it is wiser, therefore, to throw it away before it is thoroughly worn out, than to keep it as an annoyance, which it will be if used too long.

To Clean Ivory.—Rub it with bicarbonate of sodium, applied by means of a tooth-brush dipped in warm water.

Hop Cordial.—The following is recommended as a palatable preparation, not inferior to many of the so-called "Hop-Bitters":—Hops, 2 oz.; dandelion, 2 oz.; gentian, 2 oz.; chamomile, 2 oz.; stillingia, 2 oz; orange-peel, 2 oz.; alcohol, water, of each, 77 fl. oz.; syrup, simple, 12 fl. oz. Exhaust the solids with the alcohol and water, and add the syrup.

Worcestershire and Holford Sauce.—The exact composition of these is not known. There are several good imitations sold in the market, none of them, however, quite identical with the original. Of course, the method of preparing these is a secret of the manufacturer. A sauce which is said to yield a product resembling the original is prepared as follows:—Mix 1½ gallons of white wine vinegar, 1 gallon walnut catsup, 1 gallon mushroom catsup, 1 gallon madeira, ½ gallon Canton soy, 2½ lb. brown sugar, 19 oz. of salt, 3 oz. of capsicum, 1½ oz. each of pimento, coriander, and curry powder, ¾ oz. each of cloves, mace, and cinnamon, and 6½ drachms of assafœtida made into a tincture, with 1 pint of brandy. Boil 2 lb. of hog's liver for twelve hours in 1 gallon of water, adding water from time to time to keep up the volume. Then bruise and mix the liver thoroughly with the water, and strain through a coarse sieve. Add this to the remainder.

Walnut Catsup.—A good formula is said to be the following:—One-half gallon of walnut juice (obtained by strong pressure, if necessary, after sprinkling the walnuts with a little dilute vinegar) is heated to boiling, the scum removed, and then mixed with 10 oz. of sardelles (with bones), 10 oz. of shallots, ⅓ oz. each of whole cloves, mace, and pepper, and ½ oz. cloves of garlic. The mixture is boiled until the sardelles are disintegrated, strained, allowed to cool, and bottled.

Mushroom Catsup.—This may be made as follows:—Eighteen quarts of canned mushrooms are cut, put into a stone jar, mixed with 10 oz. of salt, and set aside for three days, occasionally stirring with a wooden spoon. The jar is next placed for half-an-hour on a warm stove, the exuded juice then strained off through a coarse strainer, without pressing, and boiled for fifteen minutes. For each quart of juice, there is added ¼ oz. of whole allspice and pepper, 2 pieces of mace, ⅜ oz. each of ginger and cloves, and the mixture set aside to cool. When cold, it is strained and bottled.

To Prevent the Hair Falling Off.—We have been informed that the Linimentum Crinale recommended in "Squire's Companion" is one of the best preparations for this purpose. Its formula is cantharidin, 1 grain; acetic ether ¼ oz.; dissolve, and add rectified spirit, 3 oz.; castor oil, 1 oz.; oil of lavender, 15 minims. Some prescribers order the addition of more spirit. The application to be made with a small sponge every third day. Squire says after applying it a few times the head should be washed, or the application may accumulate and cause too much irritation.

Castor Oil Emulsion.—A correspondent sends the following as a good formula for castor oil emulsion, which he has frequently dispensed; it renders the oil tasteless, and keeps well: Castor oil, 6 drachms; glycerine, 6 drachms; tinct. of orange-peel, 2 drachms; tinct. senegæ, ½ drachm; water, or cinnamon water, to make up, 3 ounces. Dose, one table-spoonful every night.

Cocoanut Hair-Oil.—Cocoanut oil, ½ pint; castor oil, ½ pint; alcohol, 6 pints; slippery elm bark, 1 oz.; water, 4 oz.; oil of bergamot, 1 oz.; oil of lemon, ½ oz.; oil of pimento, ¼ oz.; oil of almonds, 1 dr. The cocoanut oil is mixed with the castor oil, and the alcohol mixed slowly with them at a slight heat. The elm bark in coarse powder is dissolved in the water and strained, and mixed by agitation with the rest. Lastly, it is filtered, perfumed, and coloured with a little tincture of gamboge.

Label Varnish.—One of the best label varnishes is the following:—Sandarac (in coarse powder), 100 parts; mastic, 40 parts; copaiba, 15 parts; Venice turpentine, 30 parts; oil of turpentine, 40 parts; alcohol, 90 parts; absolute alcohol, 90 parts. Macerate until solution is effected.

Angostura Bitters.—Angostura bark, 4 drachms; chamomile flowers, 1 drachm; cardamom seeds, 2 drachms; cinnamon, 2 drachms; orange-peel, 1 drachm; raisins, 1 lb.; diluted alcohol, 2½ gal. Macerate for one month, then press and filter.

Cherry Tooth-Paste.—Boil briskly 1 oz. of potassium carbonate and 1 oz. of powdered cochineal in a pint of water till reduced to 12 oz. or 14 oz. When cold, add cream of tartar, 1 oz.; alum, ½ oz.; glycerine, 2 oz.; and water sufficient to make 16 oz. of filtered solution. Add 4 oz. of honey, and set aside for a few days to see if fermentation occurs. Carefully mix the liquid with 2 lb. of prepared chalk, 1¾ oz. of orris powder, and ¾ oz. of cassia powder.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION, AND HEALTH.

By B. H. Thwaite, F.C.S., A.M. Inst. C.E., &c.

THIRD PAPER.—HOUSE DRAINAGE ARRANGEMENTS.

The position of the drains in relation to the house cannot be too well considered. The drains should be laid from the house to the main sewer in as direct a line as possible, and all its divergences should be made by means of wide sweeping curves. Acute angled bends often produce the deposition and accumulation of the solid constituents of the sewage, and the drains become in time entirely stopped up.

The proportion of the size of the pipes to the work they have to do should be carefully arranged. There is no advantage in having the drain-pipes too large for the volume of sewage they have to carry away. It will be clearly evident to the reader that when only a single slop-pipe of, say, one inch bore feeds a drain-pipe of, say, nine inches diameter, the quantity of water that would run full bore through the one inch pipe would merely form a thin film of water at the bottom of the drain-pipe, and have comparatively no flushing power; and, in the absence of the latter, it is not surprising that the solid and slimy constituents of the sewage become deposited in the drain, and that the latter very soon becomes stopped up.

Generally, one drain-pipe of three inches diameter of bore is sufficiently large to carry away the waste issuing from three slop sink-pipes. Of course, when one branch drain of, say, three inches in diameter joins another, the size of the latter should be of a size proportionate to the additional sewage it will have to carry away. The author has seen numerous instances where the main drain had only the same sized bore as that of its numerous branches, with the inevitable result that in a short time it (the main drain) became entirely choked up, owing to its incapacity to carry away the sewage poured into it.

The drain-pipe connected to the water-closet soil-pipe should have at least a 4-in. diameter bore. The connections of the branch drains to the main drain leading to the sewer should, if possible, be in the following order:—The bath-water cistern and slop-sink wastes should be the first to join, and the water-closet last. The drain-pipes should be laid with such an inclination or fall as will produce a velocity of the flow of sewage equal to not less than 3 or more than 10 ft. per second. An inclination of $\frac{3}{4}$ of an inch to the foot, or $2\frac{1}{4}$ inches to the yard, produces a satisfactory flow of the sewage. The position of the disconnecting traps, or appliances for preventing the passage of the sewer-gases into the house, deserves the most serious consideration. As near as practicable to the sewer end of the drain, one of these disconnecting-traps with its ventilating pipe should be fixed, but not near a window or door, otherwise the sewer-gases passing from the ventilating pipe may possibly enter the house through them.

Another *ventilated* disconnecting trap should be placed at the bottom, or foot, of the water-closet soil-pipe, but always *outside* the house wall; and this latter remark applies to the *connections* of all household waste-pipes with the drain-pipes. In fact, the following ought to be considered an axiom of household sanitation:—*That no drain should be connected to the household wastes, of whatever description, on the inside wall of the house.*

Except where it is impossible to arrange the drain differently, no drain should pass under the house.

All waste-pipes from slop-sinks, &c., should pass through the house wall, and fall over a ventilated disconnecting gully-trap—which should form the house-side termination of the drain.

The various positions of the drains and their adjuncts having been decided upon, *they should be carefully and accurately marked upon the plan of the house.*

Few owners can show a plan of the drainage of their household property at all, and when any new connections, alterations, or repairs are required to be made, the position of the drains has to be sought for, and in such a case before the drain is found as great an expense has been incurred as would have paid for the alterations, &c.

Every person building a house should insist on having an accurate plan of his drainage arrangements, which ought to be fixed in some position easily accessible to the occupier; by this precaution, much future annoyance and expense would be saved.

The excavation of the trenches for receiving the drains (commencing at the sewer end) should now be proceeded with; and the junction of the drain with the sewer should be made in such a way that the direction of the flow of the sewage in the drain shall be as near as possible identical with that of the main sewer.

After the passing of the Public Health Act of 1848, the use of drain-pipes of earthenware or stoneware became general, but the old and defective rubble-drain system of construction is far from obsolete, and is even now only too commonly used in country places. Earthenware drain-pipes are generally two feet long, and have at one of their ends an enlargment to form a socket to receive the plain end of another pipe.

The following are characteristics which a good drain-pipe should possess:—

It should be perfectly straight, and have a truly concentric bore; be well salt-glazed, and very hard burnt. This latter is a very important quality, and one easily ascertained by applying pressure to one of the pipes; if it is imperfectly burnt, it will crumble to pieces, and its fractured ends will not present that burnt appearance which a good well-burnt pipe ordinarily possesses. Before the pipes are laid in the trench a bed of Portland cement concrete should be laid in the latter to receive them, and the drain-pipes should be *solidly* bedded on the concrete. Pipes are often laid in such a way that the enlarged socket-ends are the only parts solidly bedded. Leaving the straight lengths, or trunks of the pipes, entirely unsupported, it is not surprising that these pipes often col-

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

lapse under the superincumbent weight of the earth, &c., over them.

It may be mentioned here that a new description of drain-pipe has lately been introduced into the market by the Farnley Iron Company. This pipe is formed with a solid seat, without any projection of socket beneath it; and by this means a solid bed for the drain-pipe is more easily obtained.

The pipes having been laid with their socket joints at the highest level, or nearest the house end of the drain, the joints may be made good either with well-tempered clay or with Portland cement. A layer of concrete should now be laid entirely over the pipes. This latter precaution is very advantageous, insomuch as, if the joints leak, the concrete will prevent the sewage from escaping into the subsoil; besides, the concrete lining adds considerable strength to that of the pipes. After the concrete lining has become properly set, the earth may be filled in to the trenches. If it is unfortunately necessary for the drain-pipes to pass under the basement of the house—such an arrangement should be avoided—iron pipes may be advantageously used. They are much stronger than those of earthenware; and, as they can be obtained in regular lengths of from 9 to 12 feet, the number of the joints is far less. The joints can be made either with Portland cement or by a mixture of sal-ammoniac, sulphur, and iron filings in the following proportions by weight:—

1 sal ammoniac in powder,
2 flour of sulphur,
80 iron borings made to a paste with water.

Spence's metal may be used, or lead, but the author would not advise the use of the latter, as lead is unquestionably an influential agent in producing corrosion of the iron. The liability of iron pipes to the weakening action of corrosion or rust is certainly a great disadvantage, but it appears that iron does not suffer materially in contact with sewage, probably due to the ammonia present, which will neutralise the corrosive action of the acids which sewage contains. Inasmuch as, that the pipes, if not protected, will on the external sides be subject to the highly-corrosive action of the moisture, arising from the subsoil, they should, before being laid, be coated with some anti-corrosive agent, such as tar, applied as follows:—The iron drain-pipes should be dipped into liquid tar, heated to a temperature of about 500° Fah., and when the pipes have attained the temperature of that of the tar they should be withdrawn. Another admirable plan is to have the pipes coated with magnetic oxide by the Bower-Barff process. The iron drain-pipes should also be bedded in concrete, as described for earthenware drain-pipes.

You cannot eat your cake and have it: you cannot waste your vital force and still keep it for use.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

By D. A. Sargent.

(*From the "North American Review."*)

THIRD PAPER.

In enumerating these four great classes we have not attempted to deal with the exceptional cases. That there are many such cases in every college we are well aware. But our purpose has been to bring out the prevailing characteristics of each class as a body, to show the motives that prompt them to exertion, and to review their efforts in the direction of physical culture. To summarise, we may say that the athletes devote too much time to the development of special powers, and sometimes carry their exercises to excess; that the sporting men rely upon their inheritance, physical and financial, and make no attempt to renew their capital; that the scholars, as a class, take too little exercise; and that the idlers take no exercise at all. When we consider the relative numbers in these several classes in all our colleges, it is safe to conclude that of the whole number of students not more than 10 per cent. give any attention whatever to physical exercise, and that less than 6 per cent. take it systematically as a means of culture and development.* Surely, then, the charge that too much time is given to muscular education in our literary institutions has the slenderest possible foundation in the facts of the case. And it must be evident, too, that the members of college crews and ball nines are not in any proper sense representatives of the physical condition of the average students in their respective institutions. The bane of American college life to-day is the spirit of prize-getting which underlies and inspires the entire system. It is equally powerful in every department of education. It utterly destroys harmony of development. It unduly cultivates a student's powers in one direction, and dwarfs and stunts his growth in every other. The valedictorian has no time for exercise, or is too weary to take it; the champion athlete has no time for study, or is too stupid to begin it. One sits in his room with a wet towel about his head, and conscientiously works out his allotted task; the other stretches himself upon a lounge and has the day's lesson poured into him by admiring comrades. Both are toiling for fame, though in opposite directions. Both have won honours for their Alma Mater; so she gives them the same certificate of acquirements. And as to subsequent usefulness in the world, there is little to choose between them. There needs to be a recognition of the supreme value of unity in education, of the harmonious cultivation of a man's mental, moral, and physical nature. Now we ask, if physical exercise is thought by our college faculties to be of so much importance that they should permit and encourage a certain class of students to devote two, three, and four hours a day to body culture, often to the neglect of their studies, would it not be well, to make some provision for those who are not athletically inclined, but who are more in need of exercise, and to whom, if judiciously applied, it would be of the greatest

* The reader will understand that we are speaking of American colleges as a whole, and that the general interest in physical training among the students of Harvard, Yale, and some others of our larger Eastern institutions is exceptional, and not representative.

benefit? This is to be accomplished only by furnishing every fitting school and every college with a well-equipped gymnasium, by making its exercises a part of the regular curriculum, and by having them executed under the supervision of a competent instructor. By many institutions these requirements have been met in part—that is, one college is provided with a fine gymnasium, another has a good instructor, and a third has made its exercises obligatory. We know of but two or three institutions in the country where all these advantages are combined. The gymnasium is, and has been since the days of ancient Greece, the great school of physical education. All its appliances were invented for that purpose. And as gymnasiums are used to-day, why are they not a success? Simply because they do not accomplish the object for which they were established: they fail to give every man who has access to them a complete and thorough physical training. But this is not the fault of the gymnasium in itself. Let us look at the building and the apparatus provided by some of our colleges, then at the manner of conducting the exercises, and then inquire as to the character and ability of the men who have charge of the gymnastic department and the principles upon which they are appointed. We shall doubtless find that the want of interest has not been wholly due to the obstinacy of students, but that the fault may be traced back, directly or indirectly, to the faculty or the boards of trustees and overseers.

A gentleman gives forty or fifty thousand dollars for the erection of a gymnasium. The planning is handed over to an architect who has no idea of the kind of building required, but who feels it his duty to get up something that will at least be an ornament to the campus. He generally succeeds in doing this, and the donor and the corporation are satisfied. But what can be said of the structure, as to its fitness for a temple of health? It is a building eighty feet long and half as many wide, poorly lighted, heated, and ventilated. The bath-rooms are on one floor, and the dressing-rooms in the attic or cellar. The walls, roughly finished in brick or granite, are frescoed with dust in the summer and with frost in the winter. The floor is made of spruce, and its seams are filled with gravel. In fact, incongruity and unfitness meet us on every side and in almost every detail. Why should this be so, when the amount of money contributed is large enough to meet all demands, and the ground space allotted is ample? Because the architects and builders employed do not know the requirements of a good gymnasium, and seldom seek the advice of those who have practised gymnastics for years, and have made a life-study of the subject. The result is an edifice not adapted to the work for which it was designed. Exceptions should be made of the finely-constructed gymnasiums at Harvard and Princeton; nor would we judge too sternly those institutions which have been obliged to remodel an old building in order to have any gymnasium at all.

TEACHING LANGUAGE TO BRUTES.

"L. B." writes to *Science* as follows:—Is it not quite conceivable that some of the lower animals might be taught to use human language rationally? No doubt the reasons for a first hasty answer in the affirmative would be that the animals seem so intelligent as sometimes even to reason, and that they have, in fact, often had human words put into their mouths, and that they seem sometimes to have a language among themselves. Yet, after all, cannot their intelligence, and even wisdom, and occasional apparent reasoning, be satisfactorily explained, without attributing to them true reasoning, as the result of hundreds or thousands of generations of experience and transmitted memory, by which certain objects or actions become associated with a feeling of pleasure or pain that induces pursuit or avoidance? How few, indeed, are the cases that cannot readily be so explained, where an animal appears at first sight to exercise a reasoning power, and how extremely simple the effort seems then to be!

True reasoning can always be reduced to the syllogistic form, in effect a statement that what is true of a class is true of something in that class. In order, then, to reason, properly speaking, it is necessary to use a general term (a word or sign with the meaning of a common noun) to indicate the class; and, as we do not know of any evidence that brutes have such words or signs, we have no proof that they can reason. In like manner, the lack of evidence that they can reason goes far towards showing that they have no language that includes such general terms, though it may be true that they sometimes understand words in a singular (not general) sense, and have similar expressions for their own feelings.

The question, then, is whether brutes may not be taught the intelligent use of general words or common nouns, which would enable them to reason. As the step does not seem so very enormous from the undeniable intelligence of some brutes to the lowest form of generalisation, it is perhaps worth while to consider how they might possibly be taught to take the step, in hope that, having once taken it, they might be led farther with still greater ease. Since the idea of plurality appears to lie at the very bottom of the idea of class, number would perhaps be the first and simplest step in generalising,—number, that is, the regarding things merely as individuals or units. It is a step beyond, to regard things as alike in more complex respects. If that is so, the first effort might be made to teach how to count, and, of course, at the beginning only to count up to two. If that can be accomplished, still further counting can unquestionably be taught, and no doubt by degrees a much greater amount of generalisation and reasoning itself. Does it seem impossible that a brute may learn to associate invariably the word "one" with a single object, and "two" with a pair of objects, no matter of what kind? At first the two objects should always be two like ones; but by degrees a difference in them might be allowed. The teaching of common names might next be taken up; or it might be begun along with the counting, but without the confusing addition of any plural termination. Even if the mere counting up to two could not be taught successfully to any single individual brute, yet the end might nevertheless be attained, perhaps, in several generations.

The question then comes, With what animal would it be best to begin such experiments,—whether with monkeys, or elephants, or birds, or ants? Of course, articulation is not essential; for a language of signs might be devised suitable to the animal—a language corresponding to the deaf-and-dumb one of signs, or to one using the Morse alphabet, or something like it. Elephants are very intelligent, but so very long-lived that it would take ages to observe the effect of training through many successive generations. Perhaps the convenience of excellent articulation and rapid propagation, both combined with apparently good intelligence, might give the preference, on the whole, to a talking bird, such as the Indian mynah.

In nine cases in ten a bad temper is a sign of disease. As a rule, healthy people are cheerful and good-natured.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Energy in Nature; Being, with some Additions, the Substance of a Course of Six Lectures upon the Forces of Nature, and their Mutual Relations. By Wm. Lant Carpenter, B.A., B.Sc., &c. (Cassell & Co., Limited.) 1883.

Mr. W. Lant Carpenter (whose articles on "Electrical Appliances" are well known to the readers of Health), has done a wise and acceptable thing in bringing together, into volume-form, the substance of the lectures on physical science he has delivered under the auspices of the "Gilchrist Trust." The lectures, which thus form the substance of this book, deal with some of the weighty problems of matter and force, and, indeed, may be said to lead us into the very arcanum of Nature's secret ways and works. A great good, in an educational sense, is accomplished by works of which the present volume is an example. In the first place, the information dispensed is of sound character. The author's statements may be relied upon as explanatory of that which actually exists, and which has been demonstrated. In the second place, the information is conveyed in a clear and terse style, such as only the true teacher can attain. But in the third place, the inferences and deductions from the facts detailed are likely, in the hands of such an author, to be safe and reasonable, and to represent neither overdrawn conclusions on the one hand, nor prepossessed ideas on the other. We have closed Mr. Carpenter's book with feelings of the liveliest satisfaction. He has admirably succeeded in conveying his readers through the great fields of matter and force, and even of life itself; acting as their guide and counsellor, pointing out the lessons to be drawn from the study of the material universe around us, and enabling his readers to gain broad and enlightened views of the constitution and order of nature. Now, all this information represents a positive educational gain of no mean kind. Few of us know much, after all, about the world in which we live; still fewer comprehend what is meant by such terms as "force" and "energy." Yet, that the appreciation of such details should form the basis and groundwork of ordinary education and of an intelligent knowledge of "the world we live in," no teacher will deny. As a text-book of physical science in its elementary aspects, and as a safe guide, and a pleasant one withal, to a knowledge of the forces which work out the ways and laws of nature, Mr. Carpenter's volume may, at the outset, be heartily commended to all aspiring minds, ready to learn and eager to know.

We cannot pretend, in the pages of a journal like Health, to give an exhaustive account of the fields of research into which Mr. Carpenter leads us. But the topics of which he treats possess, at the same time, many points of contact with health-matters. People will not interest themselves in health-matters who do not feel kindly-disposed towards science at large; and there are, besides, many and direct ways in which health-laws and physical science become interwoven. Thus, a knowledge of chemistry is a *sine quâ non* for successful health-reform. We must know something of the behaviour of gases under various conditions, in order to secure ourselves against the effects of bad or defective drainage; and we must certainly possess an intelligent conception of the physics of the air before we can hope to understand the function of breathing. The broad elements of the sciences which deal with the matter of the world, and its disposition and behaviour under varying conditions, are lucidly detailed in the volume before us; and in this latter aspect it is, therefore, a volume which may very profitably be studied by young and old alike.

In the purely physical details of his work the author deals with such subjects as "Matter and Motion," "Heat," "Chemical Attraction," "Electricity," and "Magnetism." Each of these heads is duly illustrated—a word of praise must be bestowed on the number and clearness of the wood-cuts with which the pages of the volume are illustrated—and everywhere the author's first endeavour appears to have been that of making the most abstruse facts clear and

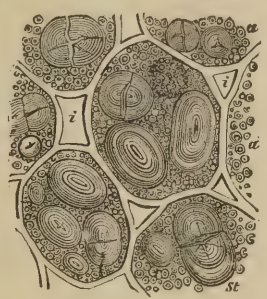

Fig. 1.

plain by abundant detail, and through references to other and well-known sources of information. The chapters on "Electricity" strike us as being models of clear and lucid writing. No one reading these sections of the book can rise from their perusal without gaining a sound knowledge of the interesting facts relating to the curious phenomena with which they deal. The quackery which is rampant in electrical matters has been abundantly illustrated in our pages; and there is little need to point out that it is on the supreme ignorance of the public, in respect of electrical science, that the quacks, who offer their so-called "electric" and "magnetic" appliances for sale, flourish and thrive. No more interesting study in physical science presents itself to the inquiring mind than the subject of electricity and magnetism. Those who wish for full details respecting electricity, not

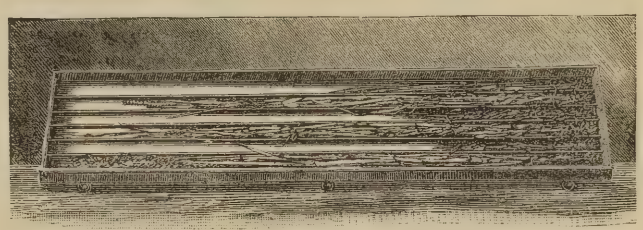

Fig. 2.

only in its more abstruse applications, but in its practical aspects as applied to telegraphy, electric lighting, &c., will find in Mr. Carpenter's pages all the information they can desire.

The section of this work dealing with "Energy in Organic (or living) Nature" (p. 172), brings us face to face with the deepest problems of nature in the shape of the nature of life and the ways and works of animated beings. The living germ, absorbing matter or food from the outer world, converts this matter into its own substance, and grows and increases, while it also discharges, through the energy, or "power of doing work" it derives from its food, the ability to perform all the actions of its life. The higher plant, for example, makes and stores up starch in its cells (Fig. 1), the starch granules being shown at *st* in the figure, while

oil globules are seen at *a*. Again, through the *chlorophyll* or green colour of other cells, or possibly, as recent researches show, through the *protoplasm* or living matter of the cells in conjunction with the green matter, the plant splits the carbonic acid gas into its carbon and oxygen, retains the carbon for food, and sets free the oxygen into the atmosphere. The influence of the electric light on vegetable growth, as shown by the late Sir W. Siemens, is also duly alluded to by Mr. Carpenter. "In November, 1881," he tells us, "two plots of precisely similar ground on Sir W. Siemens' farm were sown with oats, wheat, and barley, the same seed being used in each case. One plot was not interfered with in any way; the other was lighted by the electric light from sunset to sunrise, until May, 1882, when ears were cut from each plot. The figure (Fig. 2) from a photograph kindly permitted by Sir W. Siemens, shows the result in each case. The three long ears were from the portion electrically lighted at night, the three short ears in the other; the difference is greatest in the case of the oats, and least in that of the wheat. A very remarkable feature in these experiments, first pointed out by Sir W. Thomson, and fully

Fig. 3.

confirmed by Sir W. Siemens, is, that no artificial light will affect this decomposition of carbonic acid in growing plants unless the temperature of the source from which it comes is above that necessary for the dissociation of carbonic acid, namely, 4,000° Fahr. The electric light is, as yet, the only artificial light that fulfils these conditions. Another inference from the experiment is, that the period of rest, hitherto considered necessary for plants during their growth, is not nearly so essential to them as was generally supposed."

No less interesting are Mr. Carpenter's words when he points out how the storage of solar energy or that of the sun is witnessed in the block of coal, wherewith we heat our rooms. From curious plants related to the little "horse-tails," or *Equisetæ* (Fig. 3) of our ditches, but exceeding these plants many hundred times in size—and from other forms of vegetable life now extinct, coal has been found in the laboratories of the earth; and an examination of "the contents of a coal-bed" (seen in Fig. 4), where the stems, &c., of the plants are cut across, clearly shows us the exact nature of the fuel we burn to-day. George Stephenson, the railway pioneer, enunciated a great truth when he spoke of the sun's light "bottled up" in the earth, driving his engines, and giving to man the means of employing the giant Steam.

Some interesting details concerning "foods," and the energy they are capable of generating within our bodies, is given at the close of the volume. Dr. Frankland showed that the amount and cost of food necessary to be completely oxidised (or used up) in our bodies to raise a

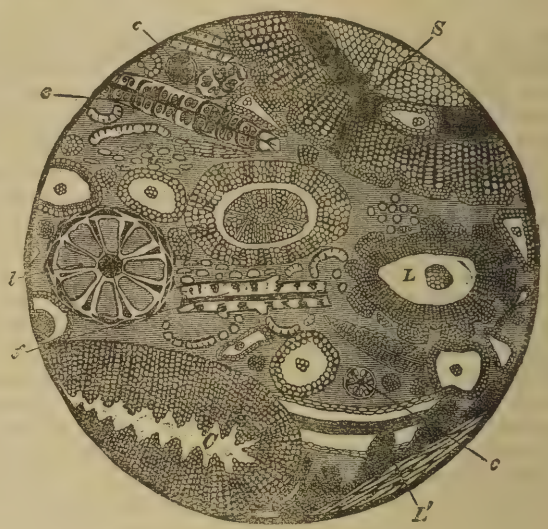

Fig. 4.

man's weight (140 lbs.) 10,000 feet high, might be thus tabulated:—

	lbs.		Price per lb.		Cost.
Bread	2·345	...	0s. 1½d.	...	0s. 3½d.
Oatmeal	1·281	...	0 2½	...	0 3½
Potatoes	5·068	...	0 1	...	0 5¼
Beef fat	0·555	...	0 10	...	0 5¼
Cheese	1·156	...	0 10	...	0 11½
Butter	0·693	...	1 6	...	1 0½
Lean beef	3·532	...	1 0	...	3 6½
Pale ale	9 bottles	...	0 6	...	4 6

The *real* values of foods in relation to work is thus shown; but the above estimate takes into consideration the full oxidation and use, and proper digestion of the foods in question.

The dietary for an adult man per day is also given by Mr. Carpenter; about 4,000 grains of carbon and 300 grains of nitrogen are required. The following dietary represents these quantities:—

	ozs.
Bread	18
Butter	1
Milk	4
Bacon	2
Potatoes	8
Cabbage	6
Cheese	3¼
Sugar	1
Salt	¾
Water alone, and in tea, coffee, beer, &c.	66¼
Total	6 lbs. 14¼ ozs.

No volume we have recently seen contains such a rich storehouse of facts concerning every department of Nature, and no better gift-book can be placed in the hands of young people, than that under review. "Children of a larger growth" it is needless to say, will likewise find its pages to teem with instruction.

Sanitary Appliances, Etc.

MESSRS. DOULTON'S FILTERS.

The "Improved Granular Charcoal Filters" of this firm may be highly commended to all who desire a safe and convenient form of filtering apparatus. In addition to the granular charcoal through which the water passes, a block of manganous carbon is also used as a filtering medium, and a double action is thus given to the filter. In the "Manganous Carbon Filters," made according to Dr. Bernay's patent, the filtering material just alluded to is employed. These filters give highly successful results, and an important feature of their make consists in the fact that from their mode of construction, the filters can be readily taken to pieces and cleaned. These and other makes of filters can be inspected and seen in working order at Messrs. Doulton's well-known works "The Lambeth Potteries," London, S.E.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

HEALTH AND EDUCATION.

Sir,—As an instance of the enormity of the evil nowadays of girls' education I send you the following facts, which are within my own knowledge. During the annual examination which has lately taken place, one of the girls (at the school to which my three sisters go) one night worked up her next day's subjects till 11 o'clock, got up at half past four in the morning, and during the short time she allowed herself for rest (viz., 5½ hours) she actually rose three times to see if it was time to dress and go down to work. If the health of our girls is so wickedly neglected, what kind of issue shall we see flourishing in the next generation? I may also add that I have just lost a sister from brain fever, caused by her working terribly hard for the London Matriculation for five months—which she passed first class—she was only 17 years old.

I remain, Sir, yours truly, Common Sense.

NAVVY WORK AND SCHOOL.

Dear Sir,—As "navvy" work is, I fancy, not thought of in most schools, I should like to point out what a valuable help to physical training this can be made. Too much time given up to any one game makes boys, except the enthusiasts, tired of it. Constant change is necessary for young people, and an hour or two every week at pick, shovel, and barrow is taken to kindly by many boys. A boy will leave his classics and pitch into this rough work, as he does into football, with the greatest benefit to his body and mind. The use of the pick is most popular, and to give up this tool for the barrow is a capital lesson in unselfishness. A glance at a party of boys engaged in this work is interesting; earnestness, selfishness, idleness, and their opposites can all be seen. Surely, here is a chance for the schoolmaster to study character. Indirectly, too, this work being learnt by gentlemen's sons, must have an elevating effect on the labouring man, who sees that his own hard work is not despised. The repairing of tools opens out further work for the schoolboy carpenter and blacksmith. We ought to be more practical than we are, out of school.—Yours faithfully,

E. F. T. Bennett.

QUERIES AND ANSWERS.

[We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*]

[Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

[We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.]

[Owing to the necessity for our going to press early in Christmas week, we must ask the kind indulgence of those correspondents whose "Queries" wait for reply. These "Queries" will be answered in our next number.]

["General" answers have been crowded out of this issue.]

SANITARY.

Annoyed Householder.—You have no legal remedy, we believe. Consult your solicitor.

George Caird.—The "Wash-out" is, in our opinion, a good closet. Read articles on "Closets," by Mr. Munday, in recent numbers of Health.

Alexis.—1. Manuscript to hand. Many thanks. 2. The soil-pipe is evidently at fault. Have it seen to. The "cesspool nuisance" may be present in your case also.

Oxley.—We believe not. Try "Sanitas" fluid and powder.

Eliza M.—Corfield's "Laws of Health," Longmans (1s. 6d.) should suit you, or Galton's "Healthy Dwellings" (Macmillan). Parke's "Hygiene" is too voluminous for your purpose.

Andrew Fairbairn.—Use "Griffith's Patent White." It is reliable and safe, and is a white zinc pigment of good standing nature. Lead poisoning is unknown where it is used. Address Messrs. Griffiths & Berdoe, Liverpool, the makers.

Cool.—A difficult problem to solve. Are your outlets not too high? Shift them, experimentally, 3 ft. lower, and you may cure the evil.

Alexander Orr.—The deposit should be analysed. Possibly it is entirely due to water-sediment, but we have never heard of such a case, and the matter demands chemical investigation.

S. N. Glass.—The near proximity of a w. c. to a bedroom is never desirable. If thoroughly trapped and drains secure no harm can result, but in very few cases are w. c.'s properly constructed, and under the circumstances we should advise you, at all risks, to shift your quarters. Sewage and drain gases will penetrate easily through floors and partitions such as you describe.

MEDICAL.

Mesdames.—Guard against all cold and chill; let the child's food be generous; clothe it warmly in flannel; give plenty of cream and rich milk; and if the ear-troubles supervene again, give hot baths and apply poppyhead fomentations or a hot, roasted fig (as a kind of poultice) to the ear. No medicines will be required unless fever continues high, when the doctor should be called in. The attack was one of earache.

T. J.—See advice to "Anxious," in Health No. 37.

G. A. M.—No remedy, so far as we know, for such a disease. Try paring the nails down as far as can be done without pain. That is your only chance of stimulating their growth.

Victor.—1. Yes; cold sponge bath each morning, if it can be borne. 2. About an hour before meals for the tonic. 3. Yes; perfectly consistent with health, if not too frequent. 4. Persevere with general health care, and you will soon be well. A cheerful frame of mind greatly assists the cure.

False Eyes.—The redness of eyes of which you complain is simply an indication of lowness of your general health and overstrain. Whatever tends to rest eyes and body, and to make your

general health good, will cure your eye troubles. Bathe the eyes with luke-warm water at night and cold water in the morning. Glasses should be resorted to if your sight fails.

Torpid.—Pressure of some kind or other on the nerves and vessels causes the feeling of "going to sleep" in a limb. If you cross one leg over the other, the compression of blood-vessels tends to produce this condition. No disease is necessarily present. See to the warmth of your feet and body generally.

Respice Finem.—Try the tonic for a time recommended to "Anxious," in Health No. 37, and let us hear how you are. No need, from your description, to feel alarmed. See that you rest as much as possible.

Lily.—Try Thomson's "Cod-liver Oil Cream" (Dublin-street, Edinburgh—advertised in Health) as a pleasant and agreeable form of taking the oil. You should persevere with this treatment, as you certainly require such medicine.

Transplanting.—No such successful plan is known. Don't attempt it. Get good false teeth on gold (vulcanite is "cheap and nasty"), and you will not complain of further troubles.

H. Rose.—Read Dr. Pratt's "Sermon to Young Men" (Baillière, Tindall, & Cox, London), advertised in our columns. Glad to hear our advice did you good.

Pysche.—A case for medical consultation. The symptoms are those apparently of dropsy or of some allied disorder. Have a good medical opinion, as much may be done to relieve such symptoms.

Lex.—Wear a suspensory-bandage, and bathe the parts morning and night in cold water. Drink plenty of potash-water for the other affection, and avoid all stimulants. You possibly require a little rest.

Worried.—See advice to "Anxious" in Health No. 37, and write again if not improved. No need to be "worried."

Anxious One.—No; not an absolute guarantee, for cases occur now and then in which the unexpected result happens under such circumstances. The signs and symptoms to which you allude may be absent apparently and yet the result may occur. As a rule, what you state is correct, but there is no absolute law.

Desideratum.—Yes; the hot sea baths would do good. You clothe much too lightly. You must have plenty of flannel, otherwise you will never be well.

F. W. D.—1. Yes; the habit of sleeping in a day-shirt is a dirt habit and prejudicial to health. No cleanly person does such a thing. The skin secretions in such a case become loaded, and you possibly don't take a daily bath. If you value health, practise cleanliness above all things. 2. Hot-water bottles are not to be commended. Rather wear socks in bed (and change them frequently).

T. A. M.—Try a little "Pepsine" with your food. The "specks" are mere symptoms of lowness of body. A change of air and a little rest would evidently do you more good than medicine. We can only repeat that you must persevere in our former advice. Above all, don't get low-spirited.

J'ai Bonne Espérance.—You must alter your mode of life in so far as to discover which foods are disagreeing with you. Your troubles are all of a digestive nature, and you must look to the state of your stomach. See advice to "T. A. M." above. Use a little Vaseline for the itching, but your cure lies in attention to diet. Above all, rest after food. Write again if not better.

Zebedee.—Any bracing (but not cold) seaside place will suit a scrofulous case. The south coast presents many such places—Eastbourne, Hastings, Ramsgate, and Margate (if not too cold). Even Penzance is mild and adapted for such, and living is cheap.

Blackstone.—Try the lime pills ordered to "Ninon" in No. 37 of Health, and write again if not improved. Give up tea for a time.

F. N. Jeeves.—No addressed envelope was enclosed in your letter. If one is sent, we shall most gladly comply with your request.

J. B. X.—If you attended to our directions to correspondents, you would see that we cannot (on account of press-arrangements) reply to letters in the same week as that in which they are received. You were replied to in No. 37 of Health. If not fully answered there, write again. We do not preserve letters.

Nimrod.—We think there has been congestion of the liver, as your description is clear and lucid enough; but as regards the kidney-affection, we are unable to say anything. The probability is, however, that all your symptoms really arise from digestive disorder, in which the liver-trouble may play the chief part. We should advise a consultation with, and examination by, a competent authority; and, if desired, we shall be glad (on receipt of a stamped addressed envelope) to send you the name of a trustworthy adviser in London. A personal examination is a necessity in a case like yours.

Gus. D.—Don't be over-sensitive. There will always be a number of impudent persons in the world, who will pass remarks; and our advice to you is not to trouble with depilatories, which, in your case, would never be satisfactory in their action, and cause more trouble than all they are worth.

Buda Pesth.—As we thought—the "institution" won't be drawn into giving the names of its medical advisers. If honest and above-board let them give you the names you want, otherwise you cannot be assured of the qualifications of their "medical officers."

F. W. G.—Try Morson's "Pepsine" with your food; and you might also give the inhalation recommended to "Mignon," in No. 35 Health. Let us hear again how you are.

R. Parr.—Try the effect of cold douches, and of painting the parts with tincture of iodine.

Champion.—Try the effect of lighter food, and of avoiding all stimulants. Is your work excessive or not? See to this. Possibly you may require more open-air exercise. Tulloch's Pure Dutch Cocoa is a good brand.

Invalidus.—Yes. You should give the tonic you name a trial, or try the effect of 10 drops of *Fer Bravais* in water, thrice daily. Morson's "Pepsine" along with your food is also to be recommended. Don't try any "water-cures,"—they are of no use in your case, which is one for judicious dieting and careful watching. The vegetarian diet is probably too poor for your case. If you care to try the dyspepsia cure we have recommended in many cases, you may—it is this: to live for a time almost wholly on milk, liquid foods (Brand's soups, beef essence, &c.,), and thus restore tone to the stomach by giving it rest. Glad to advise further, if need be.

H. Townsend.—See (and follow) advice to "Anxious," in No. 37 Health. The person you name is a qualified medical man; but we know nothing of him, save that he advertises, and such a practice is incompatible with the ideas and ethics of the medical profession. Don't despair, but follow our advice; be cheerful, and write again if not cured.

Perplexed.—1. We do not approve of dipping the head in cold water every morning. In many persons it causes headaches. 2. No accounting for what you name. Try a bath at a lower temperature. 3. Avoid all stimulants in diet; give up tea and coffee; and attend carefully to digestion. You might try the lime pills prescribed to "Ninon" in No. 37 Health. 4. Hot water increases liability to skin-chill. Give up the hot water, and try tepid water or cold.

Wellwisher.—Warts are thickenings of the skin-surface, and indicate some abnormality of growth. Causes vary greatly. Try touching them with glacial acetic acid; but do not allow the acid to touch the skin at all.

Floating Feather.—You should try to be less nervous. See to your general health—this is the best advice we can give you. Rest for the eyes is, of course, necessary. But your troubles will be lessened if you can succeed in being less nervous. Try the tonic recommended to "Anxious" in Health, No. 37.

G. Harrington.—See (and follow) advice to "Anxious" in No. 37 Health. Don't take supper at all, if you can possibly avoid it. Be cheerful, and try to follow advice given as directed.

R. Warden.—Try the effect of warm baths occasionally, in the water of which a little bicarbonate of soda has been dissolved. Look to your food; the itching arises from some irregularity in your food. Take "Æsculap Water" as a mild aperient occasionally in the mornings, and let us hear how you are.

"E. M.," Grenock.—No "cure" for wrinkles is known to us. There is no altering the contour of the face produced by muscular contraction.

C. Cleveland.—1. There is such an institution conducted by Mr. Van Praagh, 11, Fitzroy-square, London. 2. Fellow's "Syrup of the Hypophosphites"; a teaspoonful thrice daily in a wineglassful of water before food.

Greaves.—Try judicious dumb-bell exercise and graduated trapeze or bar exercise at a gymnasium; and sponge the chest with cold water, and use with friction each morning.

X. Y. Z.—"Æsculap Water" in the mornings as a mild aperient; care and attention to diet, which, for a time, should be very slight but nourishing, milk, light-boiled eggs, puddings, soups, &c. No stimulants. Write again if not improved.

Elaine.—You might try the inhalations recommended to "Mignon," in No. 35, Health, when the cough is troublesome. Sponge the chest with cold water each morning, and use brisk friction thereafter; and begin a course of cod-liver oil or cod oil emulsion, through the winter. Clothe warmly. Yours is only a case for care and attention to the general health, as just directed.

Anthony.—You are evidently excited and over-nervous. Try not to be so; there is really no cause or need for despondency. Read and follow advice given to "Anxious" in No. 37, Health, and let us hear how you are in a week or two. The tonic there recommended will do you good. We shall gladly recommend a physician to you (on receipt of stamped addressed envelope) if our advice

[*Continued on page* 208.

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does not benefit you. Let your food be generous; and a little "Æsculap Water" as a mild aperient occasionally in the mornings may also do you good.

F. C. Kemp.—The pimple is an indication of "grossness" of blood. Live more generously, and take the lime pills ordered to "Ninon," in Health, No. 37.

Fool.—Your ideas are quite erroneous. No need to be alarmed. Wear a suspensory bandage, and above all take rest. Take a mild aperient occasionally, and, as an injection, use "Condy's Fluid" twice or thrice daily (one part to ten water). The tonic you name may certainly be taken. Attend strictly to cleanliness.

Battle.—1. Possibly wax is the cause. Drop some glycerine into the ear over night to soften the wax, then syringe in the morning, and avoid cold thereafter. If the boy has had fever of any kind, and if there is any discharge from the ear, take him to a surgeon. He may be the better if cod-liver oil (thrice daily), to which syrup of iodide of iron has been added by your druggist. See, by all means, to his teeth. 2. Depends on the kind of the "worms."

Miseramus.—Keep the part clean; wash frequently with soap and tepid water, and thereafter rub in a little pure Vaseline. If not better in a week or two, write again. Don't irritate the lip by applications such as you have been applying.

Cathcart.—Take for a time the tonic above recommended to "C. Cleveland." See to the ventilation of your premises; abstain from all stimulants, and take moderate open-air exercise. If not improved, write again.

Sweetness.—1. We do not approve of pamphlets such as that you enclose. They savour of quackery, because they deal in remedies—"faith cures," it seems to us—of "secret" kind, and assume forcibly that there is a great deal of mystery about the cases they propose to treat. 2. We can hardly say whether or not, in your case, the electrical appliances would be serviceable. If you will kindly re-state your case, we shall be glad then to give you an opinion.

A Constant Reader.—Try the effect of rubbing in warm Vaseline or oil along the track of the pain. Avoid constipation; food to be light and nourishing; no stimulants. If not improved, write again. Hot salt baths may do good.

Teri.—Glad to hear the patient improves in food-taking. See article on "Chilblains" in No. 30, Health. Care in food and dietary is the sheet-anchor of the patient's health. Let the food be light—soups, milk, &c.—and few solids for a time.

A Future M.R.C.S.—1. Dyspeptic troubles are the cause. See to your diet. Avoid vegetables for a time; eat slowly, and rest after food. 2. Not necessarily; thirst depends largely on the amount of bodily work, etc. 3. Possibly a strained muscle. Give up the exercise entirely for a time and take complete rest. Cold douche and brisk friction thereafter may do good.

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 4, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

PROFESSOR STRUTHERS, of Aberdeen, well known for his efforts to diffuse science-teaching among teachers and the public, takes up the subject of physiology in schools in a communication to the *Lancet* of last week. Dr. Struthers writes vigorously, as is his wont, and enters a protest against the apparent "sneer" with which he thinks the *Lancet* dismissed the topic. The editor of that journal, however, remarks that the article which prompted Dr. Struthers' protest was meant merely to discourage "indiscriminate dabbling in physiology by persons who have the merest smattering of the subject." Our contemporary also insisted upon "very careful consideration in selecting fit and proper pupils to be taught, both with regard to age and social position." We are glad to note that Professor Struthers goes straight to the heart of the matter in condemning the idea that the broad facts and truths of human anatomy and physiology cannot be taught to intelligent school children with satisfactory results. It is, indeed, high time to protest against the attempt of what claims to be authoritative opinion, to discourage science-teaching in our schools. It is perfectly easy for any writer in the pages of any journal, lay or professional, to maintain that human physiology cannot be taught in schools. But, in criticising this opinion, we are entitled, firstly, to inquire specifically as to its source; secondly, regarding the experience which its author has had in the teaching he condemns; and thirdly, concerning the amount, extent, and nature of the science which, it is urged, cannot be taught in schools.

✣ ✣ ✣

PROFESSOR STRUTHERS gives the following pungent passage regarding the utility of physiology, in his letter above referred to:—"That such knowledge is of use to all human beings, probably few persons who have reflected will doubt, even to the 'costermonger's son,' unless we are content to let him live and die like a beast, and to have for our own lofty ideal of life to eat and drink and make money. It is of no use, we are told, to try to explain things, but are just to tell the people what to do. But I do not believe, for instance, that anybody ever will attend properly to ventilation who does not know what oxygen and carbonic acid are and what goes on in the lungs; and yet there are probably more people carried to a premature grave by having avoidably breathed carbonic acid than by the abuse of alcohol. Then people nowadays, philosophers and others, who talk so much about mind, might with advantage first have a look at a brain and know something definite about its functions; and in these times, when everybody is discussing how mankind began, it would be well if people had some notion of the kind of knowledge which is necessary before one can be entitled to form an opinion on that rather important discussion."

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Now these words appear to our minds to settle the whole question at issue. The difference of opinion seems to be one less regarding the value of physiology at large in the care of health than concerning the nature and exact amount of the science it is advisable to impart to school-children. Into the technicalities of the subject no one can for a moment argue that it is possible or necessary to lead young persons. But it is exactly the abstruse parts of anatomy and physiology that are useless for all popular and sanitary purposes. The technicalities of brain-structure and nerve-action, or the discussion of vexed questions of blood-composition and chemical physiology, are examples of topics which no one would dream of even trying to teach senior boys or girls. But there is surely no reasonable person who denies that it is easy to impart to school-children a sound knowledge of the skeleton, the general conformation of the muscular system, the structure of muscle, the work of the heart, the nature of breathing, the functions of the skin, and allied topics. After all, one grain of practical experience in teaching is worth bushels of theoretical chaff, and we contend that not only are there many capable teachers ready and willing to teach physiology in schools, but that the results of such teaching as is now imparted are highly beneficial in placing our youth in possession of the knowledge that forms the only sound basis for the intelligent pursuit of the laws of health.

✣ ✣ ✣

SOME interesting experiments have recently been made regarding the matter which consumptive patients cough up from their lungs. As most readers know, many able authorities hold that consumption is the result of the growth and propagation, within the lungs, of a microscopic living particle called a *bacillus*. A French experimenter, working with the matter brought up from the lungs of patients in the streets, has found that when a guinea-pig was inoculated with this matter (which had been frequently dried and remoistened in imitation of its treatment in the streets), the animal died of general consumption in about three months. The experimenter therefore concludes that it is of high importance to recognise that such matter may be offensive and dangerous to health, and may become a source of disease to those who are in any way predisposed to consumptive trouble. The danger incurred by a healthy person sharing the bed-room of a consumptive patient is also thus demonstrated anew.

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A CURIOUS item of intelligence comes from America, in the shape of an allegation that a new and curious disease affects those employed in the Treasury Department at Washington. It seems that amongst the women employed in counting notes sore hands are common and general ill-health frequent. These sores, according to the account

given by an official, are due to the presence of arsenic in the notes, and few, if any, of those engaged in the work in question, seem to escape these troubles. American enterprise, assuming the above statements to be correct, should be equal to the abolition of this evil.

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The subject of "fires" relates itself in a very distinct fashion to the preservation of life, and the prevention of fire is a matter deserving the close attention of every householder. There are very few persons who organise within their houses any system, however simple, whereby, should fire break out, a timely arrest of the destructive agent may be effected. Yet the need for some such system is obvious, and the utility of such precautions is attested by the fact that in the vast majority of the fires occurring in cities the use of the handpump, or of a simple hose, is found perfectly effective in checking the conflagration—always provided the fireman arrives early upon the scene. In the first instance, it is the householder or his representatives who possess the means for checking a fire in the beginning of its course; but it is curious to reflect on the fact that it is rare to find, even in large houses, any provision made for extinguishing the enemy. Is it too much to expect that the ordinary dwelling house of the future will possess such means? or that architects and plumbers will together devise a simple adjustment of the waterpipes, whereby, at convenient points in the house, a hose could be attached, and a fire extinguished at the beginning of its career? Failing the possession of such appliances at present, paterfamilias might initiate many a less useful reform than the organisation of simple means—in the shape of handy buckets or hose kept within easy reach—for the prevention of fire and for insuring the safety of his household. Here is an admirable scheme in the shape of the idea of "Domestic Fire Prevention Appliances" for the further elaboration and practical attention of insurance offices, architects, and enterprising manufacturers generally.

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The "quack" advertisement nuisance seems to have taken a new lease of life in London, judging from the numerous letters (enclosing samples of the advertisements in question) we have of late received. Owing to the existing state of the law—which our readers will remember we tested by an appeal both to the Public Prosecutor and to the Director of Criminal Investigation—any quack may flood the streets of London with literature of obscene kind. As we write, this practice is being successfully carried on in Piccadilly, Regent-street, Oxford-street, and in other thoroughfares. Contrasted with the repression of the quack fraternity in Sheffield and elsewhere, the laxity of the law in the greatest city of the world is, to say the least, highly remarkable.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

ELEVENTH AND CONCLUDING PAPER.

Breakfast should be taken about seven or eight o'clock, and the following articles are permissible:—Brown or white bread a day old, toast, rusks, and butter. This should be laid on with a moderate hand. Bacon, ham, one egg boiled or fried, some haddock, kippered herring, sardine, a kidney, or a piece of devilled game or poultry may be allowed; cold roast or boiled beef or mutton, with some fat, may be taken. Watercress is also a pleasant adjunct to the breakfast-table, and the patient may eat plentifully of them or of mustard-and-cress. As drinks, an ordinary breakfast-cup of strong tea or coffee, with a lump of white sugar and two teaspoonfuls of milk, if the patient like it; but tea without sugar or milk may be taken, or a slice of lemon should be added to it. A quarter of an hour after this meal the patient should walk to his office, or, if not engaged in business or in some professional capacity, should walk at least three miles out and home at a brisk pace; but if engaged in business, he should walk to the office, taking care not to get chilled, remembering that stout people, as a rule, perspire freely.

For *lunch*, which should be taken at 1 or 2 o'clock, a small plate of soup, a small quantity of roast or boiled red-meats, green vegetables plentifully, and potatoes in the following fashion:—They must be sliced very thin, and fried in fat until they become quite chippy, forming the dish known as "potato chips." These should only be taken in small quantity, and while I do not debar turnips, carrots, nor beetroot, still I allow them in very small quantity, and only very occasionally, because of the large amount of sugar they contain; but I find that some people have a strong liking for them, and when they know that, except in very small quantities, they are a sort of poison, the practitioner will find little difficulty in persuading them to take them only very occasionally or not at all. Salads with oil and vinegar, or with ordinary salad-dressing, may be freely allowed. Any kind of fish may be taken, but the richer kinds, such as salmon and eel, must be eaten sparingly. If sauces and pickles are liked, they may be allowed without stint.

Fish may be substituted for meat or fowl. Duck, goose, game, rabbit, hare, sweetbreads—any and all may be eaten. Cheese is also good; but the various cream cheeses should only be partaken of occasionally. Pastry is better avoided.

As drinks, a half-pint of good bitter ale, or a couple of large wine-glasses of sound claret, or a tumbler of sound, dry sherry-and-water, or two glasses of dry champagne, or some of the light acid foreign wines diluted with water, or with some mineral water such as soda, seltzer, potash, lithia, or Apollinaris. A little brandy-and-water may also be taken. The dry ciders also form agreeable drinks for people who are accustomed to them. Whether wine or cider be taken, it is desirable that all fermentation shall have ceased in them. Teetotalers must drink either water, toast-and-water, or cold tea, and as milk or sugar would not be agreeable at dinner, it is better without them.

Dinner should be taken at 7.30 or 8, and should consist of a choice of the articles allowed for lunch, and

may be washed down with one of the same drinks. A small cup of strong tea or coffee, with a teaspoonful of milk or cream, or with a teaspoonful of brandy, may be taken half an hour after dinner, when smoking may begin, which should be limited to two or three pipes of good tobacco or a couple of cigars in a similar favourable condition. The patient must never sleep after dinner, or at all in the day-time. Occasionally a dinner of several courses has to be taken, and if the patient will only take small quantities of several of these he may go through an ordinary *menu* without detriment. He must not mix his wines, and if fond of a glass of champagne should drink a little plain or mineral water till this appears on the table, and then, unless it be a good and *naturally dry* wine, should take hock, chablis, or claret. Half an hour's rest, *without sleep*, should follow dinner, and a smart walk of a couple of miles is then very beneficial.

At bed-time, which should not, as a rule, be before half-past eleven or twelve o'clock, a little toast with anchovy paste or sardines, or *pâte de foie gras*, or a devilled kidney, may be eaten if the patient be really hungry; but it is better to do without supper altogether. If the patient be in the habit of taking a nightcap, especially in the cold weather, a little cold or hot whisky-and-water, with lemon if preferred, but without sugar, may be taken, and the subject may then retire to the arms of Morpheus.

The *regimen* or mode of life consists in regular living as to hours of rest and work, regularity in taking the exercise ordered, systematic ablutions, and the like. A few guiding words on these points are needed. Fat people should rise early and retire late. 11.30 to 12 should be their bedtime, and 6 or 7 the hour for rising. Immediately on getting up a sponge-bath (or swimming, if it can be obtained) should be taken. This should be tepid in winter, cold during the rest of the year, and should be followed by brisk friction of the body with a rough towel for 10 minutes. The patient should dress quickly, then take a half-pint of cold water, and start for a brisk walk of at least a mile out and home, when breakfast will be thoroughly enjoyed. There can be no doubt that walking is the best form of exercise, but for those who can afford it riding is an excellent remedy, and should be regularly taken morning and afternoon, for an hour each time. Trotting brings most of the muscles into play, so that the horse should be kept on the trot for a large part of the time, and every now and again a good gallop will not only vary the monotony of trotting, but will rest the thigh muscles and bring those of respiration into full action.

The *surgical* treatment consists in the use of mechanical means for compression of the layers of fat around the abdomen and chest, and in the proper use of massage, gymnastics, and electricity. No operative measures can be of use in this disease. Only once has it been attempted to excise large masses of fat from over the abdomen. This was done by an Italian surgeon on a German duke, and resulted fatally. As massage and electricity cannot properly be applied by the patient, and as orthopædic gymnastics require teaching by example, rather than by description, no more need now be said about them.

Compression, when judiciously used, is of undoubted service, but an examination of the heart should be made before systematic and gradually increasing compression is adopted. I can recommend the belt known as Schramm's *Boncontour*, and am able to state that many ladies have expressed themselves thoroughly satisfied with its effects.

Though much more might be said on the subject of corpulence, I believe I have given the essentials of the matter, and were I to pass on to the consideration of the subjects of *leanness* and *poorness of blood* in a similar way, I fear I should exhaust the patience of our editor. Moreover, these are matters which require knowledge of diseased-processes, and make a call on pathology which is not to be expected from the majority of the readers of HEALTH. I shall deal with these subjects, however, in a shortly forthcoming *brochure* on corpulence and leanness.

SANITARY GOSSIP.

BY DR. THOMAS J. HUTCHINSON, F.R.G.S.I.

(*Corr. Mem. of Anthropological Society at Florence, &c., &c.*)

"An I prate of things here and there,
'Tis only *Gossip*."

FRESH AIR.

THERE are few axioms more truthful than that of Mrs. Campion in "Lothair," when she observed: "I look upon atmosphere as the main source of felicity." If we could live in the open air, and away from the partially corrupt atmosphere of towns, the natural laws of the rate at which the wind travels, would keep us in the way of an almost constant change of pure, fresh air. When circulating at only a mile per minute, it is scarcely perceptible; at from ten to twenty miles per minute, it is breezy; from thirty to fifty miles a minute, it is a gale; from fifty to seventy, it is a storm; and from eighty to 110 miles a minute, it is a hurricane. But as none of us desire to pass our lives in either gale, storm, or hurricane, and fresh air is indispensable for existence, let us consider a few points connected with the respiration for our bodies, and the ventilation of our dwelling-places.

The air consumed in breathing, by an adult man, is 16½ cubic feet per hour. That which is thrown out from the lungs at every expiration contains a larger proportion of carbonic acid than it had when entering the lungs, and to lower the amount of carbonic acid until it is only four parts in 10,000 (as in pure air), it is necessary to mix with each one part of vitiated air, 125 parts of pure atmosphere, or to suffer the alternative of being poisoned—slowly, no doubt, but eventually poisoned by the gradual action of the bad elements on your health. It is, therefore, not sufficient for a man to be supplied with the exact quantity of air which enables him to perform the function of breathing, but with 125 times that quantity, or about 2,000 feet per hour. This, however, only refers to a state of health, as a larger quantity by far is needed in case or sickness—for which, I must refer my readers to their family doctor.

That we are still in the dark regarding the meteorological phenomena which govern the atmosphere is evident from what is reported as occurring in the United States last July. We are told that a wave of intense heat passed, in the middle of that month, over the United States, causing the thermometer in some localities to approach 100 deg. Fahrenheit. The heat killed 672 infants in New York

SANITARY INSPECTIONS.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—THE SANITARY ENGINEERING CO., 115, Victoria-street, Westminster, S.W.—[ADVT.]

WEST GREEN, TOTTENHAM, WEST GREEN COLLEGE FOR LADIES.—The Principal, MISS BRISTED, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. MISS BRISTED'S pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[ADVT.]

city during the week. It also caused many cases of sunstroke throughout the country—six persons having died from this cause at New York on Saturday, three at Brooklyn, five at Philadelphia, and two at Jersey city.

While the inhabitants of New York were thus sweltering, a cold wave swept over from the north-west, causing fires to be lighted and overcoats to be worn at Chicago. On Sunday of the first week of July, in New York, Fahrenheit's thermometer at many houses lowered 35 deg., and copious rains were falling.

INTERNATIONAL HEALTH EXHIBITION.

The following Sub-Committees, appointed by the Executive Council of the Exhibition, have met at the Society of Arts:—*Food* (Group I.).—Monday, Dec. 17. Present: Sir J. B. Lawes, Bart., LL.D., F.R.S., in the chair; Professor Church; Professor George Fleming, LL.D.; Sir B. T. Brandreth Gibbs; Professor H. N. Moseley, F.R.S.; Dr. David S. Price; Mr. John M. Thomson; Dr. Voelcker, F.R.S.; Mr. H. Trueman Wood. *The Dwelling House* (Group III.).—Friday, Dec. 14. Present: Sir Robert Rawlinson, C.B., in the chair; Dr. Alfred Carpenter; Mr. H. H. Collins, Mr. C. N. Cresswell; Mr. T. W. Cutler; Mr. J. Bailey Denton; Mr. W. Eassie; Mr. R. E. Farrand; Mr. Rogers Field, M. Inst. C.E.; Captain Douglas Galton, C.B., F.R.S.; Mr. George Godwin, F.R.S.; Mr. E. Hoole; Mr. Baldwin Latham; Mr. Shirley F. Murphy; Dr. G. V. Poore; Mr. George Shaw; Dr. Thorne Thorne; Mr. E. Turner, F.R.I.B.A.; Mr. George Vigers; Mr. H. Trueman Wood.—Wednesday, Dec. 19. Present: Captain Douglas Galton, C.B., F.R.S., in the chair; Mr. A. T. Atchison; Mr. W. R. E. Coles; Mr. H. H. Collins; Dr. Corfield; Mr. Thomas W. Cutler; Mr. Heisch; Mr. Baldwin Latham; Professor T. Hayter Lewis; Professor Chandler Roberts, F.R.S.; Mr. Frederic Scott; Mr. George Shaw; Mr. George Vigers; Mr. Greville Williams, F.R.S.; Mr. H. Trueman Wood. The School (Group IV.), and Education (Group VI.).—Tuesday, Dec. 18. Present: Mr. E. N. Buxton, in the chair; Mr. B. St. John Ackers; Dr. T. R. Armitage; Mr. J. G. Fitch; Dr. J. H. Gladstone, F.R.S.; Major-General Hammersley; Mr. T. C. Horsfall; Mr. A. C. King; Col. W. R. Lewis; Dep. Inspector-Gen. F. J. Mouat; Mr. E. R. Robson, F.R.I.B.A., F.S.A.; Mr. H. Trueman Wood. The Workshop (Group V.).—Saturday, Dec. 8. Present: Dr. G. Buchanan, F.R.S., in the chair; Dr. A. Dupré, F.R.S.; Mr. Alexander Redgrave; Mr. Gilbert Redgrave; Mr. H. Trueman Wood.—Saturday, Dec. 15. Present: Dr. George Buchanan, F.R.S., in the chair; Dr. Edward Ballard; Mr. J. H. Bridges; Mr. A. Redgrave; Mr. G. Redgrave; Mr. H. Trueman Wood; Mr. W. Woodall. *Sick and Ambulance.*—Tuesday, Dec. 18. Present: Director General Crawford, in the chair; Deputy Surgeon-General Bostock, C.B.; Brigade-Surgeon W. G. Don; Surgeon-Major G. J. H. Evatt; Mr. John Furley; Deputy Inspector-General F. J. Mouat; Director General John W. Reid; J. C. Steele, M.D.; Mr. H. Trueman Wood.

"Lochinvar" Old Scotch Whisky.—For invalids who are ordered whisky, or for those who use this valuable spirit to promote and aid digestion, it is important that the whisky *be well matured by age*. The "Lochinvar" is a blend of the finest Highland whiskies, and is *guaranteed five years old*. Sold by all wine merchants. Wholesale only of Hills & Underwood, Eastcheap, London.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

Treatment of Premature Baldness.—Dr. Lassar writes to the following effect on the etiology and treatment of early baldness. From observation and experiment upon animals it was found that the disease is contagious, and occurs independently of any general affection or the state of health of the patient. The method of treatment recommended is as follows:—The scalp is to be washed every day with tar soap, or soft glycerine soap, or with soap containing sodium iodide; the soap is to be thoroughly applied, and rubbed into the scalp for fifteen minutes. Following this a warm douche is used; then, after the application of a corrosive sublimate solution (two parts in one thousand), the hair is dried, and a half per cent. spirit solution of naphthalin is rubbed into the affected parts. Carbolic or salicylic acid may also be employed. If this treatment be adopted in the early stage, when the hair is just beginning to fall, it usually proves successful, but it must be kept up for eight weeks or more. The fact that this disease is due to a communicable morbid principle, suggests that it may be conveyed by the comb and brush of the barber.

Vaseline.—Dr. Langlebert exhibited some time ago, at the Paris Therapeutical Society, some emulsions of vaseline, prepared by means of gum tragacanth, which held in suspension various medicinal principles, such as sulphate of zinc or copper, &c., and which may be employed for injections. The active substance of the injection becomes, so to say, more adherent to the diseased parts, with which it thus remains longer in contact than in the case of ordinary injections. These samples had been prepared for more than three weeks, and in only one of them was there any sign of a commencing separation of the vaseline. Moreover, this fatty body has the advantage over others of not becoming rancid. In answer to an observation by Dr. Créquy, that ointments prepared with vaseline are less fitted for the promotion of medicinal absorption than those made with lard, Dr. Vigier observed that, as the result of a series of researches he had made on this point, he had found that lard is the best fatty body when medicinal absorption is desired, vaseline coming next, and glycerine last. This last, therefore, is a bad vehicle when absorption by the skin is in view, but an excellent one when we wish to avoid this; so that we may by its aid avail ourselves of the insect-killing action of corrosive sublimate without fearing the production of mercurial poisoning.

The Treatment of Boils.—Dr. Gourgues claims speedy and excellent results in the treatment of boils by boracic acid. He employs an ointment of 4 grammes boracic acid in 20 grammes vaseline with ½ gramme benzoic acid. The boracic acid should be finely powdered and not dissolved in alcohol or glycerine. This ointment continuously applied relieves the pain promptly, and causes the disappearance of the boil in three or four days.

Treatment of Catarrh or Cold.—The following combination is stated by M. P. Vigier to have been used with good success in catarrhal affections:—℞ Picis liquidæ 1·0

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

gramme=15 grains; Benzoini 1·0 gm.=15 grains; Pulv. ipecac. et opii 1·0 gm.=15 grains. Mix. Make into ten pills. Take three pills daily between meals.

To Prevent Excessive Sweating.—One drachm of sulphate of quinine is to be dissolved in a pint of alcohol, and the body and limbs are to be bathed with it, a small surface at a time being exposed to prevent catching cold by evaporation. Dr. T. H. Currie, of Lebanon, is said to have found this efficacious during an experience of thirty years.

Circassian Pomade (*Circassian Cream*).—Oil of almonds, expressed, 4 parts; lard, 2 parts; benzoin pomade, 2 parts; rose pomade (French), 1 part; alkanet, q. s.; oil of rose, q. s. Melt the lard, pomades, and almond oil together on the water bath, colour them to the proper tint with alkanet, then remove the heat, stir until nearly cold, and add 8 to 10 drops of oil of rose for each pound of product. *Benzoin Pomade* is thus prepared:—Fresh beef tallow, 20 parts; fresh lard, 10 parts; benzoin, 6 parts. Melt the tallow and lard to a temperature of about 85° C. (185° F.), place in a melted mass the benzoin (in coarse pieces, tied in a muslin bag), and macerate for several hours, keeping the vessel well covered. Then strain and let cool.

Cucumber Pomade or Cream.—Oil of almonds, expressed, 40 parts; oil of sesame, 3 parts; wax, 2 parts; spermaceti, 3 parts; cucumber juice, 35 parts; oil of neroli, 1-16th part. The cucumber juice is obtained by pressing the cucumbers, raising the juice quickly to boiling, and filtering it through linen. In order to better preserve the aroma of cucumbers, it is advisable to prepare so-called "cucumber oil" by macerating cucumbers in the finest quality olive oil for twenty-four hours, and then using this in place of the almond oil. By adding freshly-expressed cucumber juice to fresh lard melted on the water-bath, the aroma may likewise be transferred to the lard which separates from the watery liquid on cooling. The aroma may further be imparted to oils or fat by so-called tincture or essence of cucumbers, which is prepared by digesting sliced cucumbers with a quantity of deodorised alcohol sufficient to cover them, and distilling the alcohol off after twenty-four hours.

Baking Powder.—Tartaric acid, 6 ozs.; bicarbonate of sodium, 8 ozs.; flour, 32 ozs.; mix.

Glass Labels.—When, as will sometimes occur in sudden change of weather, or from age, glass bottle-labels drop off, leaving the resinous layer, together with the lettering, adherent to the bottle, it may again be fastened by painting the glass and label with concentrated solution of white shellac, and holding the glass in place for a few days by means of an elastic band.

Suppositories for Piles.—℞—Iodoform, 1 drachm; balsam Peru, 2 drachms; cocoa butt., 1½ drachms; cera alba, 1½ drachms; calcined magnesia, 1 drachm. Mix. Incorporate the mass thoroughly and divide into twelve suppositories. Insert one after each evacuation of the bowels, and oftener, if needed.

SURGICAL EXPEDIENTS IN EMERGENCIES.

At the Medical Society of the State of Pennsylvania, Dr. Lewis recorded several surgical expedients in emergencies, in which the skill and readiness of the surgeon are often severely tested. Some of these suggestions were quite ingenious.

In *opening a vein* when a proper lancet is not at hand, an ordinary pocket-knife will answer, provided the vein be held in position by transfixing it with a needle after applying the ordinary bandage.

For *obstinate bleeding from the nose* requiring plugging of the nostril, a piece of sponge, to which a string is fastened, is forced through the front nostril to the hinder nostrils; small pieces of sponge are then to be threaded on this cord and pushed in succession into the passage until it is filled; when the danger of hæmorrhage is over, they can be removed by reversing this process. Another good method in an emergency, is to take a portion of the intestine of a chicken or other small animal, close one end, and pass it through the nostril; water or air may now be forced into the portion in the nostril so as to make equable compression. If it is necessary to plug the hinder nostrils, a slender gum bougie, or a piece of thick catgut ligature may be passed along the floor of the nostril and brought out under the soft palate; a string can then be attached and brought out of the nose in front by withdrawing the bougie; the sponge can then be employed in the usual manner.

A very efficient substitute for the *Esmarch elastic bandage* is a flannel roller cut bias. For dislodging and forcing downward a *foreign body in the gullet*, an ordinary carriage or riding-whip knotted sufficiently far from the end to ensure flexibility, may be used.

Good temporary *dressings for fractures*, may be extemporised by tearing palm-leaf fans into strips; a more permanent fixed dressing can be made by dipping ordinary sandpaper in hot water, and applying it while soft, it adapts itself to the shape of the limb, but becomes sufficiently strong and rigid afterwards; hard dressings can also be made with starch, or eggs and flour.

In moving a patient with *fractured thigh*, the sound limb may be made into a splint, by fastening the legs together. In treating fractures of the thigh, complicated apparatus is not necessary; simple extension by weights is all sufficient, the limb being kept in position by lateral supports or sand-bags. The postural method without splints is to be preferred in all fractures near to joints; fracture of the collar-bone is best treated by the resting or supine position, with the head slightly elevated.

Epigram.

"Perhaps," said a doctor one day to his friend,
"You remember a tale which you made me attend;
That tale, sir, much more than you think of, has cost,
It detained me so long, that a patient was lost!"
"Alas!" quoth the friend, "I'm quite sorry for that,
That your patient should suffer by my idle chat."
"He suffer!" the doctor replied with a sigh,
"No! he was a gainer! the sufferer was I
Nature popp'd in between, while I slackened my speed,
And the man had got well before I could get fee'd."

Rain leaders need not be trapped, except when their dipper ends terminate near garret windows. The best point at which to discharge a rain leader is the house end of the main trap, because it tends to keep it free from deposit.

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION, AND HEALTH.

By B. H. Thwaite, F.C.S., A.M. Inst. C.E., &c.

FOURTH PAPER.—HOUSE DRAINAGE ARRANGEMENTS (*continued*).

Often the main sewer of the street is at such a shallow depth, that it is impossible to obtain a proper fall or inclination for the house drain; the remedy that should be adopted in this instance is to use a syphon flushing tank (such as that of Field's or Adam's). This appliance, as its name implies, acts by syphonic action, and consists of a small iron tank, having an inlet at its lowest level, for receiving the sewage coming from the house, and an outlet, for the continuation of the flow to the sewer, at its highest level; so that when the tank is filled with sewage to the height of this outlet, it passes off, thereby producing syphonic action, by which the whole of the sewage in the tank is withdrawn, and at such a velocity as to produce a considerable flushing action in the drain.

All drains, besides being connected with the rain-water fall pipes, should be periodically flushed with water, say once in every seven days. By the flushing action the drain will be freed from any deposit partially accumulating, and which, if allowed to continue, might become the source of much trouble and annoyance.

It will be seen by the clauses of the Public Health Acts before enumerated, that extensive powers are given to local authorities, or their official representatives in the matter of house drainage; and if the surveyor or official representative properly interprets the meaning of the powers given to him, defective drainage arrangements should—at least for new buildings—be the exception, and not, as they are unfortunately are, the rule.

Although the laying of drains is a work of such transcendent importance on the future *health character* of the house, it is usually left to carried out by the most ignorant and irresponsible of workmen. But let us hope that architects and others entrusted with the supervision of the erection of dwellings will become convinced, and act upon the conviction that this branch of constructional work should be carried out with care as great, if not greater, than that of the other branches of construction included in the building of dwellings.

Instances have already been given in the pages of Health showing how dishonest and unscrupulous builders have allowed drains to end blindly, instead of connecting them to the main sewer.

The author has indeed known of instances in which builders have made a pretence of connecting the house-drains to the main sewer, but on future examination (rendered imperative by disease), the drains were found to terminate blindly at a short distance from the house. In one instance, in order to satisfy the surveyor of the Local Authority that the connection of the drain with the sewer had actually been made, the builder had opened out a trench near the sewer, and actually laid a few yards of pipe-drain from it. The surveyor, seeing this, was satisfied that the house-drain had been properly connected to the main sewer.

The opportunities for scamping work which are attached to the laying of drains are fully taken advantage of by the reckless builders; more especially by the type known as the "jerry builder." Instead of obtaining good, sound drain-pipes, he uses any old and broken pipes he can lay hold of; these he lays without any regard to regularity of fall. Up and down he lays them, and every few yards they form a capital cesspool, in which the sewage lodges or escapes through the imperfect joints, which are carelessly luted with gritty clay; or, if that is not obtainable, with ordinary earth, part of which is allowed to remain on the inside of the drain-pipe, where it acts as an obstacle to the flow of sewage, and often enough produces a complete stoppage. He is not particular whether the drains are properly and evenly bedded, as long as they are laid—no matter how; and covered up—what matters it? He soliloquises: "The defects will not be discovered for a considerable time, if even then."

As to the disconnecting traps, they are often placed unevenly, and thus the water, which should form a seal or trap for preventing the passage of the sewage gases, flows out, and the trap is destroyed, and the sewer-gases can enter freely into the house.

Although disease and death are often produced by the dishonest and unscrupulous manner in which the work of laying house-drains is carried out, yet the perpetrators of what should be a criminal action are allowed to escape, to re-perpetrate with impunity the action so pregnant with danger to the public health. What is required is an additional clause to the Public Health Acts making the action, proved wilful, of mal-drain construction punishable with severe imprisonment. Every drain, before the earth is covered over it, should be examined in every part of its length by some responsible and competent person, who should be empowered to insist on the carrying out of such alterations or additions to the drains as he may consider necessary to make them satisfactory. Mention has been made of the position of those important and necessary adjuncts to house-drains known as Disconnecting Traps, for preventing the passage of sewer gases into the house. In order to properly fulfil its functions, a sewer-trap should possess the following characteristics:—It should be made of incorrodible material, such as earthenware, stoneware, or fireclay. Oxidised iron traps have lately been introduced into the market, which certainly possess an advantage over those of earthenware, viz., that of strength.

The trap should be so designed as not to arrest, more than is absolutely necessary, the momentum of the sewage discharges. Its bends should not be square, or angular, but be nicely rounded; the seat of the trap, or the part projecting below the level of the water for preventing the passage of sewer gas from one side to the other, should not be too deep, otherwise the solids floating on the sewage will not pass under it, but will remain and accumulate on the house side of the trap. A seat projecting about $1\frac{1}{4}$ in. below the surface of the water in the trap is ample and effectual.

The trap should be well ventilated on each side of the seat, otherwise there will be a danger, when the drain-pipes are running full, of the water being withdrawn from the trap by syphonic action. If the traps are well ventilated there is no liability that the sewer gases will be forced through them when the sewers are flooded (as in the instance of a thunder-storm and heavy rain-fall), and the sewer gases are suddenly displaced and driven into the house drains, where they can escape by means of the ventilating pipe, on the sewer side of the trap. As a guide to the choice of traps, the following descriptions may be considered to be good models, and have been found to give highly satisfactory results; but any other trap possessing the qualifications enumerated should give equally satisfactory results:—

Pott's disconnecting (Edington) trap is a most useful

appliance for fixing near the outside house wall, as it is grated, and will serve as a gully, and is prepared for receiving the house wastes, as well as the rain water from fuel pipe. The only objection to this trap is its size, which is rather large.

Messrs. Stiff & Son's interceptor trap is admirably adapted for a position near the sewer end of the drain. Buchan & Banner's traps are also very satisfactory; and so, also, is Dodd's patent duplex trap, which is not only well ventilated, but is prepared for receiving the rain water from fall-pipes and all household wastes.

The ordinary lead "S" trap, commonly used for trapping sink waste-pipes, cannot be recommended. A better form of trap for sink purposes is that known as Antill's patent sink trap; but even this latter form is not free from imperfections, and the author would not advise the use of traps at all for slop sinks, baths, or lavatories, unless the waste pipes from the latter enter direct into the drain. In this case a trap is advisable, and the "Bower" ball trap may be used with advantage. The proper method, however, is to have the waste pipes conducted through the outside wall of the house, where they can discharge their contents over a trapped gully.

The disconnecting traps should be laid in a most careful manner, and be bedded firmly and level on a layer of concrete.

The soil pipe of the water-closet should be connected to the drain by means of a disconnecting trap, and into this latter, if possible, the rain-water from one of the fall pipes should be conducted.

Rainfall pipes are often the channel by which sewer gases obtain entrance into dwellings when they are directly connected to drains which are entrapped, and if the upper ends of the rainfall pipes terminate near a dormer window there is a clear channel for the passage of the sewer gas into the house through this window.

Rainfall pipes should not be directly connected to the drain, but should be arranged in such a way as to discharge their contents over the grating of a disconnecting trap—by this means the danger mentioned would be avoided.

THE DWELLINGS OF THE LONDON POOR.

The following letters have passed between the Council of the Royal Institute of British Architects and Mr. Mark H. Judge, one of the directors of the Artizans', Labourers', and General Dwellings Company, the largest owners of improved cottage dwellings in the world:—"8, Park Place Villas, W., Dec. 12, 1883. John Macvicar Anderson, Esq, Honorary Secretary, and William Henry White, Esq., Secretary of the Royal Institute of British Architects. Dear Sirs,—The important question of the condition of the habitations of the underpaid industrial classes and the abject poor, who may be described as the children of the community, inasmuch as they are powerless to help themselves, is now fortunately attracting the earnest attention of the public, and it therefore becomes of the utmost importance that reliable data should be forthcoming in order that the desire to improve the present state of things may bear fruit in wise action before the present wave of just indignation has spent itself. I therefore venture to suggest to the Council of the Institute, whether they would not be fulfilling a most important public duty at the present juncture if they could be the means of obtaining this reliable data. The question is one which cannot be solved without the knowledge and experience of the profession, and I beg, therefore, to ask the Council to consider the following proposal, viz.:—That the Royal Institute of British Architects appoint a special committee to inquire into and report on the condition of the dwellings of the London poor.—I am, dear Sir, yours faithfully, Mark H. Judge, Associate."——"Royal Institute of British Architects, 9, Conduit-street, Hanover-square, London, W. Dec. 20, 1883. Mark H. Judge, Esq. Dear Sir,—We duly submitted to the Council of the Royal Institute of British Architects your letter of the 12th inst., in which you suggest that the Institute should appoint a special committee to inquire into and report on 'the conditions of the dwellings of the London poor.' We are to state in reply that, however much the Council may concur in the general wish to ameliorate the condition of those dwellings, the means at the disposal of the Institute for such a purpose are too small to penetrate the mass of difficulties which surround the question. A generation ago a member of the Council made a noble effort to call public attention to the then state of things, and those efforts have been since renewed from time to time. Persons in authority, just awakened to the facts of the position, may perhaps be astonished at finding so much already done by Mr. George Godwin to throw light upon a subject which at last appears to have been taken up in earnest. Indeed, the probability of an almost immediate appointment of a Royal Commission to inquire into the condition of the dwellings of the poorest classes in London is, perhaps, a proof of the magnitude of the task which you invite the Institute to undertake—a task which seems to us to concern the metropolis at large, and to be the duty of a responsible Government to organise and carry through.—We are, dear Sir, yours faithfully, J. Macvicar Anderson, Hon. Secretary, William H. White, Secretary."

Bricks.—The geological nature of a country always determines the character of its buildings. Where good natural building stone is abundant, it is sure to be quarried and used; but where this does not exist, recourse is had to some artificial material which will take its place. The material which has been more extensively used than any other is brick, the manufacture of which dates from the most remote antiquity of which we have any record. Herodotus relates that the walls of Babylon were constructed of this material, and there are numerous very interesting pictorial representations of brick-making and brick-laying in the hieroglyphic literature of ancient Egypt which has been preserved to us in stone blocks and mural tablets. Moreover, the existing ruins of some of the most ancient monuments of Egypt have enabled modern explorers to obtain specimens of bricks which must be several thousand years old, the great care taken in their manufacture and the extreme dryness of the climate having tended to preserve them. For instance, there is at Memphis a pyramid still partially standing built entirely of brick, and it is very probable that this was erected by Asychis, who succeeded the son of Cheops, the builder of the Great Pyramid. It is probable that burnt bricks, such as were used in this pyramid, were the exception, and that Egyptian bricks were for the most part sun-dried only, nearly all the common dwellings being constructed of this material, but burnt bricks were occasionally used.

No More Gas or Lamp used in Daytime.—Wherever there is a window, skylight, or fanlight, Chappuis' Daylight Reflectors can be adapted. They supersede all artificial light, and are manufactured at prices suitable for either noblemen's mansions or artisans' workshops. Prospectus sent on receipt of two stamps addressed (H.) Chappuis, patentee and manufacturer, 69, Fleet-street, London.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

By D. A. Sargent.

(*From the "North American Review."*)

FOURTH PAPER.

Having put up a building, the authorities proceed to fill it with apparatus made by the college carpenter. This is arranged for appearance sake rather than for use. The material is selected without regard to fitness, and put together with little knowledge of its object or design. Hanging ropes are made of hemp, and stiffly tarred to make them durable. This object is effected, for they are never used twice by the same person. The parallel bars are broad at the base and narrow at the top, so as to render the grip insecure; and they are generally made of some splintering material, in order to remind the performer which way he is going. The trapeze is bolted to a beam in the highest part of the room, and left pendent 25 ft. from the floor. Its bars are made of wood or iron, 2 in. in diameter, and, that the novice may have every opportunity of losing his balance, holes are made in the ends of each bar, the ropes put through and tied with knots underneath. The rungs on the horizontal ladder are three-quarters of an inch in diameter, and left rough, so that they may be firmly grasped, while in the vertical ladders they are smoothly polished. Both are carefully avoided, for, in the first case, every swing forward raises a blister; and in the second case every step upward is attended with positive danger. The sand-bag weighs 75 lb., and is covered with the heaviest kind of canvas. One solid blow removes the skin from every knuckle, and makes an impression that lasts for a lifetime. This performance is never repeated. The mattresses weigh 400 lb. each, and are filled with excelsior, or corn-husks, which from constant rolling have become matted together in lumps. One had better land upon the floor than upon one of these cradle-knolls, for the former only occasions a little tingling of the feet, while the latter invariably causes a sprained ankle. The weights are neither boxed in wood, nor framed in iron, but they start from a trough filled with sawdust and dirt. Every movement is accompanied by a cloud of dust and a deafening rattle and bang.

This is a fair representation of college gymnasiums throughout the country. They are built without intelligent plan, filled with heavy, cumbersome, and in many cases perilous apparatus, and then left open to the hap-hazard experiment of all who choose to try them. With however good intentions of self-improvement a student may enter a college, he is disheartened at the outset by such a gymnasium as this. He finds no appliances adapted to his needs as a beginner, and no provision for progressive development. Constant assistance and direction are offered him in every branch of college work save this; here he finds nothing worthy of the name of instruction. When we consider that two-thirds of the students who enter college are not strong enough to use the heavy apparatus with pleasure or profit, the need of introductory apparatus becomes apparent. Wooden dumb-bells and Indian clubs do not meet this need. Something is demanded by which the biceps and triceps may be brought into alternate action, and the muscles of the back, loins, abdomen, and chest, according to their requirements. If those desiring to use the heavy apparatus would prepare themselves for it by bringing the required muscles into gentle action at first, and would then go step by step through a progressive series of exercises, they would not only find themselves increasing in power, but they would experience a certain satisfaction and acquire a discipline from the accomplishment of difficult manœuvers, which no mechanical exertion can give. The apparatus which leads one gradually up to the beneficial use of the heavy appliances may be termed adjustable weights and pulleys. These can be so arranged as to act upon any set of muscles and be adapted to any condition of strength or weakness. In order that they may be used wisely, some one should be in attendance who has a thorough knowledge of animal mechanics and the action of the muscles, as well as a comprehensive idea of the structure and function of the various organs upon which vital action depends.

This brings us to a consideration of the men who are chosen to superintend the department of physical education. For every other branch of college instruction men of recognised ability are selected, and they are then required to maintain a certain standard of excellence. But in the department of physical culture the governing boards of our colleges have seen fit to make an exception. When we find the gymnasium almost deserted, there is a cause aside from poor apparatus and unattractive quarters. It is the lack of a suitable man, with sufficient authority, at the head of the department—a man who is a college graduate, a practical gymnast, and an educated physician. Such a man, we say, must have sufficient authority; for, unless he is supreme in his own department, and can have the co-operation of the faculty, he can do no better work than an inferior man with more freedom. Many instructors possess one or more of these qualifications. Thus, some are college graduates, others are educated physicians, and a few are practical gymnasts; but all the requirements are seldom found in the same person. This is only because there has been no demand for such men. So long as college boards look upon the position as one of minor importance, and pay but a mere pittance to its incumbent, men of ability will not undergo the training necessary to prepare them for its arduous duties. Consequently these positions to-day are occupied by men who are under-graduate students working for their tuition, students in medicine or law, tutors in some other branch of college instruction, or resident physicians. In only three or four instances are thoroughly trained gymnasts employed to superintend the gymnasium. Under such circumstances the men are obliged to make their gymnasium work a secondary consideration, and a man cannot do his whole duty by this department and attend to another at the same time. Yet this is what nearly every college instructor in gymnastics is doing. He intends to make his present position a stepping-stone to something else. He devotes as little time as possible to its duties, and expends his energies in preparing for his life's pursuit. As soon as he gets his diploma he resigns his position and makes room for the next incumbent. It matters little who his successor is, but to meet the demands of the times some one must be catalogued for the place. The demoralising effect of these annual changes can easily be imagined, and can readily be seen by those who care to visit our college gymnasiums.

We say, then, that the proper physical training of our youth can never be accomplished until our gymnasiums are put in good hygienic condition, are furnished with appropriate apparatus, and are placed in charge of thoroughly competent instructors. To these requirements we will add the most important one of all: that the gymnasium exer-

cises be made a part of the regular curriculum. So far as relates to the training of the mind, a system of required exercises has been universally adopted; but the training of the body has seldom been deemed of sufficient importance to merit like care and attention. We cannot but believe that this mistaken idea has arisen from a misconception of the real function of physical exercise, and of its powerful influence upon the system at large. So long as body and mind are kept in antagonism, and the demands of one thought to be prejudicial to the interests of the other, but little advancement can be made in physical education. But when it shall be generally known that the object of muscular exercise is not to develop muscle only, but to increase the functional capacity of the organs of respiration, circulation, and nutrition; not to gain in physical endurance merely, but to augment the working power of the brain; not to attain bodily health and beauty alone, but to break up morbid mental tendencies, to dispel the gloomy shadows of despondency, and to insure serenity of spirit; when men shall have learned that much of the ill-temper, malevolence, and uncharitableness which pervade society arises from feeble health, and that the great mental and moral disturbances which sometimes threaten the stability of a government may be traced to physical causes, then will the training of the body rival in dignity and importance the training of the mind, for the interests of mind and body will be recognised as inseparable. The time is coming, though as yet some of our best and greatest thinkers, while admitting the value of physical exercise as an agent of health, still doubt the expediency of making it a department of education. They argue that a college is designed to give a boy an intellectual training, and is in no way responsible for his health and physical welfare. But when we consider that it takes from six to twelve years for a boy to complete his education, that during this time he is almost constantly away from home, and that it is a period with him when the body is peculiarly susceptible to good or evil influences, it would seem that those under whose charge he is placed should have some intelligent care of his physical as well as of his mental and moral training.

The ideal of man and woman has changed from strength to culture, from body to brain. The great brawny-muscled man, who knows nothing of sickness, but has few ideas, is looked down on; the rosy mother of a dozen healthy children, who has no taste for books, is little thought of. It may be that the time will come when such people will be more highly appreciated.

Drugs in Japan.—The British Consul in Yokohama, in his summary of trade for last year, just published, gives as the total import value of drugs, medicines, and chemicals, the sum of (Mexican) 394,624 dols., to which amount quinine contributed 40,301 dols., and santonine nearly 25,000 dols., equal to 90,000 ounces. It is further stated that 34,000 pounds of bromide of potassium were imported. The importation of morphia amounted to about 6,000 ounces. The rapidly increasing employment of Western remedies, together with the increased popularity of our methods of treatment, based upon really scientific investigation into the causes of disease, contrasts very favourably with the slow and painfully conservative action of the native physicians of China.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

Physical Education of Women.—Recently, Miss Chreiman gave a demonstration in the Vestry Hall, Hampstead, of her system of "gymnastic exercises" for young girls. Although the application of the term is quite correct, the word "gymnastic" will probably convey to most readers an erroneous idea of the nature of the exercises taught. They are intended, we are told, to develop the strength of every part of the body; to correct defects of carriage; to provide regulated and enjoyable exercise; and therefore, as a consequence, to impart flexibility and grace in movement and attitude, and a healthier growth of the body. The exercises are executed at the word of command, rhythmically, to music. There are exercises for the muscles moving the fingers, the wrists, the arms, and for the trunk. Light wooden dumb-bells are used in these exercises; and, in other exercises, long so-called bar-bells, about 4 ft. in length, are carried by the pupils, who go through a variety of manœuvres with these instruments. For other exercises, light Indian clubs are employed. On the occasion to which we refer, the performance concluded by the execution of a number of evolutions of the most complicated and various kinds, reminding the spectator alternately of the manœuvres of a squad of volunteers and of a country dance. The young pupils went through the exercises with wonderful steadiness and with evident enjoyment. We have no doubt that the system elaborated by Miss Chreiman is of great use in developing the muscular and respiratory systems of growing children; and not only so, but in encouraging a grace of pose and movement which the art of the *costumière* can never impart. We were forcibly reminded of the well-known words of Pope, as we watched the evolutions of the class. "True ease," he says,

"Comes from art, not chance,
As those move easiest who have learnt to dance."

In the days of Queen Anne, dancing was perhaps the nearest obtainable approach to "scientific gymnastic exercises." Dancing then did not consist in turning round on the tips of the toes a greater or less number of times in the minute, but was an exercise for the public performance of which much serious and private practice of complex manœuvres and attitudes, calling into play a great variety of muscles, was necessary.—*British Medical Journal.*

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The Health Exhibition and the City Guilds.—It is satisfactory to find that the great city companies are showing a disposition to take an active part in the Health Exhibition of next year. It would be strange, indeed, were they not to do so, and to manifest no eagerness to seize upon an opportunity of showing that among the revivals of the present age must be counted a revival of the sense of duty among the great guilds whose function it nominally is, and actually was, to control the leading industries of the country. Food, dress, the dwelling, the workshop, and education are all subjects in which the great companies are interested. A great deal of the food of Europe comes into London before it is distributed, and it is only proper that the guilds should concern themselves in a show which cannot be without its influence on the trade of the country. The subject of dress affords a great opportunity to the Merchant Taylors and the enlightened

guild of Clothworkers, whose efforts to improve a technical knowledge of woollen manufactures is well known in Bradford and other parts of Yorkshire, and who will now have a chance of proving to the citizens of London that they have a *raison d'être.* Seeing that a great proportion of the population is groaning beneath the grievous yoke of the plumber, it is to be hoped that the worshipful company which is supposed to interest itself in plumbing will really try to make the exhibits in this important branch of sanitary work of substantial use to workmen. Nearly all the companies are interested in education. Are they not the Trustees of Gresham College, and of many charities and other schools throughout the country, and will they fight shy of this opportunity of giving public account of their stewardship? The idea of forming a special city sub-committee is a very good one; and there can be no doubt that the City of London will stand next year as *facile princeps* among the great centres of industry which will compete for honours at South Kensington.—*Lancet.*

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A Conscientious "Sanitarian."—"I hate dark rooms," said Dr. Macdonald. "I won't have a curtain in the house, not even to the windows. Venetian blinds give all the shade I require; curtains are traps for dust, and therefore detrimental to Health." He always spoke of health with a capital H. It was the only good he recognised. All he did was with a view to attain it. He regularly partook of fish to form phosphates in the brain. A particular kind of brown bread was the only kind he tolerated. He drank water, and insisted that everyone under his authority should take a cold bath every morning. The opposition of his domestics to this arrangement had first made him think seriously of getting married. A mistress could better enforce the point. He used dumb-bells daily, and sometimes clubs for a quarter of an hour before dressing for dinner. He regulated his life with an excruciating precision, and was careful never to use his right hand without counterbalancing it afterwards by a use of his left. He considered that nine hundred and ninety-nine men and women out of one thousand are crooked from an exclusive use of the right hand; and every case of deafness or ear-ache which came to his knowledge he irrefragably traced to curvature of the spine, and his patients were astonished and mortified to learn that they were not only deaf, but deformed, and that the first thing to be done was to lie six hours daily on an inclined board he had himself invented for their delectation. When the horrified City gentlemen or stout country farmers protested against such a sentence, Dr. Macdonald observed, with contemptuous pity:—"My dear sir, what is life without Health? What is the use of success, or money, or pleasure, unless you have Health to enable you to enjoy it?"—*All the Year Round.*

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Left-handedness amongst the Ancient Hebrews.—Mr. Green writes as follows to the *British Medical Journal*:—"The subject on which Dr. Millward, of Cardiff, has so ably written in your journal—viz., Dr. Erlenmeyer's theory that the ancient Hebrews were a left-handed people—is a most interesting physiological question for medical men. History, however, does not support this theory. The Phœnician characters of the Moabite stone are the most ancient forms of Semitic letters within our reach, and date from about the year 900 B.C. Now this inscription reads from left to right, as we do in the present day. Such is the case also with the following Semitic records: The inscription on the tomb of Eshmunazer, King of Sidon: 600 B.C.; the tariff of fees in the Temple of Baal at Marseilles; the inscription from the necropolis at Tharros, in the Museum of Cagliari, Sardinia; the Carpentias inscription, an inscription from Carthage. We know from the characters on the coins of the Maccabæan princes, and upon some signet-stones, that the above Phœnician letters can be associated with the most ancient Hebrew letters. The practice of writing from right to left came into use about the time of Ezra, when probably the square form of the Hebrew characters began; the characters of the Samaritan and the Phœnician alphabets are nearly like those of the Moabite stone. The earliest Greek inscriptions, nearly allied with the Phœnician, are sometimes written from right to left; others from left to right. Others, again, show how the difference between the two methods was bridged over by the immediate practice of writing alternately—like an ox ploughing—and therefore called Boustrophedon writing. The general use of the late square Hebrew character, and the habit of writing it in the absurd traditional way we call "backwards," are great hindrances to the popularisation of Semitic research.

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Consumption is caused, in nine cases out of ten, by breathing bad air.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOME HOUSEHOLD HAND-BOOKS.

(1) *The Food We Eat; Why We Eat it; and Whence it Comes.* By J. Milner Fothergill, M.D. Edited by A. Beatrice R. Fothergill. (London: Griffith & Farran.)

(2) *The Young Wife's Own Book.* By Lionel A. Weatherly, M.D. (Same Publishers.)

(3) *Ambulance Lectures; or What to Do in Cases of Accident or Sudden Illness.* By Lionel A. Weatherly, M.D. (17th Thousand.)

Messrs. Griffith & Farran are to be complimented on the general excellence of the above three works, which form part of their "Household Hand-Books." The multiplication of such treatises is a sign of the times that the topic of health is receiving increased attention, and that year by year the people are beginning to see that the beginning of all wisdom consists in the conservation of their bodily powers and in the full enjoyment of the physical strength and robustness which good health includes and implies. The rules for healthy living are by no means of intricate nature; but they require study and reflection at the same time. Above all, the intelligent care of the body must be founded on an appreciation of the laws of our daily life, and on a knowledge of the processes and functions whereby the ends of life are discharged. The real value of a knowledge of "popular" anatomy and physiology to the public consists in the fact that such information forms the true basis of all health-knowledge. A man who pulls down a window, or who constructs a special apparatus to ventilate a room, for example, will certainly execute his work more efficiently and more intelligently when he understand how and why

he breathes, when he knows something of the need for fresh air as a factor in life's perfect working, and when he has learned the nature of the impurities which skin and lungs are always throwing off. Similarly, in the matter of foods and drinks—as we have before pointed out—it is only upon a knowledge of what physiology teaches respecting the nature of nutrition that sound opinions regarding food can be founded. "Health" is a matter of science, it is true; but it is a science, after all, which is readily learned, and which even our children at school, when properly taught its details, learn both to love and to understand.

We are glad to see that in the volumes under notice the above ideas are fully carried out. The authors treat these subjects from the scientific standpoint. They have not been content to give their reader merely the results of their studies, but lead him to know for himself the scientific basis of the information they disperse. Dr. Fothergill's book (1) is, on the whole, a satisfactory manual of "foods." Here and there we note a want of that "plain-speaking," if so we may term it, which is always essential for the success of the author who endeavours to instruct the public in scientific details. The author, for example, speaks (p. 13) of "hydrocarbonaceous matter," without explaining that this term is merely one for starches, sugars, and fats. He does not explain that the "pancreas" is the "sweetbread" of common life; and he speaks of the "lacteals" of the intestine, without further reference to the nature of these absorbent vessels. Dr. Fothergill is, however, more successful in the later parts of his work, and a vast deal of useful information is to be found in its pages regarding foods and aliments generally.

His remarks on "Artificial Digestive Agents" (abbreviated from the *Chemist and Druggist*) are worth quoting, inasmuch as the employment of these agents has come largely into vogue of late years as a means of aiding digestions which are enfeebled and weak :—

The first artificial digestive agent is extract of malt, which aids in the salivary digestion of starch. By exposure to heat and moisture the malster causes barley to germinate, just as it does in the ground; a ferment in the seed, diastase, converting the starch into sugar in the sprouts. This diatase is identical in composition and properties with the diatase of human saliva. So soon as the chemist had become assured of this fact, malt extract was ushered into the world as an aid to the salivary ferment when defective in quality or in amount. To utilise its properties, it must be given during the time salivary diastase is operative, *i.e.*, with the food when it is taken; or mixed with it just before it is taken; or immediately afterwards, before the stomach has become acid. The old rule of pudding before meat had much to recommend it from a physiological point of view. To farinaceous food, or better, farinaceous food and milk, malt extract may be added with advantage for children of feeble digestive power, or dyspeptic adults for that matter. One precaution is to be observed, and it is this: diastase is killed by a temperature of a little over 140 deg. Fahrenheit. To ascertain this without a thermometer can be done by sipping the mess. It cannot be sipped if hotter than 140 deg. Fahrenheit. When the nurse can sip the milk-pudding or gruel, then the malt extract can be added quite safely. Malt-extract is a sweet, molasses-looking, palatable substance, readily taken either with and in milk-pudding, or by itself. Beyond their value as a ferment, malt-extracts contain sugar and dextrine, nutritive matters, and the phosphates of the seed in a soluble form. Added to milk, malt-extract forms an excellent drink for babies, children, invalids, dyspeptics, and those whose digestion is impaired, as consumptives, the subjects of chronic Bright's disease, or of heart affections; or those whose livers either are easily upset or the seat of organic disease.

Then pepsin is utilised for the advantage of those who suffer from impared gastric digestion. It is prepared from the stomach of the calf, or, better still, the omnivorous pig. It is prepared as a wine or in pills. As the latter, it is readily taken, being put up in tasteless form, and easily swallowed without being observed. It is well to take the pill towards the close of a meal; a second being taken in about half-an-hour if any uncomfortable sensations are experienced.

N.B.—Though such artificial digestive agents can be utilised to help the stomach to contend with a meal unsuitable in character or amount, such use of pepsin is to be deprecated. Where there is a weak digestion resort to it is proper enough.

Then there are preparations of the pancreatic fluid, potent and efficacious, also prepared from animals. There is one difficulty about their use, and it is this, the pancreatic secretion operates in an alkaline medium, and the presence of acid is fatal to it. How, then, is it to be passed through the acid stomach? Dr. Wm. Roberts, F.R.S., of Manchester, has found that if the dose of pancreatic fluid be taken towards the end of gastric digestion (when the acidity of the stomach is being exhausted by the digestive act) under the guardianship of an alkali, its efficacy remains unimpaired. But alkalies are all nauseous to the taste. This must be submitted to—"what must be must; if we can't get crumb we must just take crust." Ten or fifteen grains of bicarbonate of soda, in solution, added to the pancreatic fluid preserve it against any acidity remaining in the stomach.

For those whose stomachs resent the presence of fats, oils already emulsionised contain much promise, and will probably soon be upon the market. Nature provides a wonderfully good form of emulsioned fat in the form of cream or milk. A tablespoonful of cream with a little Maraschino or Curaçoa is a delightful fat emulsion to be taken a couple of hours after a meal. Cod-liver oil ought not to be taken until the contents of the stomach are passing the pyloric ring, *i.e.*, till about two hours after the meal. If taken before, the oil only floats about in the stomach, offending that viscus, and interfering with its digestion. As a fat it should be taken when the digestion of fat is being inaugurated—not before. It or any other digestible oil could be taken with the pancreatic preparation if desired.

But the normal time and place of the digestive act must be observed in order to give the artificial digestive agents a fair and proper opportunity of being serviceable.

Here and there the revising pen of the editress has added a note, or comment, explanatory, and in some cases corrective, of the author's statements. It might, perhaps, have been more appropriate had the corrections and emendations been incorporated, without comment, in the text. But these are minor objections, and we may say that in Dr. Fothergill's book will be found many interesting details regarding the varied dietaries of the world—information which is not the less valuable because much of it is given in a pleasant, gossiping way.

Dr. Weatherly's first book (2) is addressed specially to young wives and mothers, and will be found a useful companion by the ladies of the household. It follows much the same lines as those taken by Chavasse, Bull, and others in their treatises on domestic medicine as applied to the care of infants and to the details connected with the lying-in-room and nursery. The author's language is clear, and his style colloquial, two features of high importance in inspiring an interest in the book and confidence in the facts and details it supplies. His remarks on women's clothing supply us with a good example of the sensible style in which he addresses his readers :—

Much has been written and said on this subject, and no one will question its importance. In this constantly changing climate of ours, where we have one day the sun shining and the air mild, and the next either a biting north-east wind or fog and rain, it is an impossibility to be always clothed suitably; yet, however difficult it may be, we should always try our best to maintain equally our body temperature, and this has to a very great extent to be done by our clothing.

How often does it happen that severe colds are caught, and the seeds of life-long illnesses sown, simply through leaving off our warm winter garments too soon! March is possibly ushered in with nice genial weather, and we imagine—but how vainly we soon find out to our cost—that summer is near at hand. Spring things are got ready, warm underclothing is discarded, and perhaps before a week is out we have colder weather than we have experienced throughout the whole winter. Bear in mind that it is far better to be too warmly clad on a warm day than too coldly clad on a cold one; and act up to this, and chills and their concomitants will be less liable to attack you.

The heat of our bodies is generated to a very great extent by the food we take, and proper clothing is necessary to enable the body to retain this heat, and not allow its too rapid departure from it.

All persons who are delicate on the chest, rheumatic, or have a tendency to intestinal troubles, should always wear flannel next their skin, and more particularly on the part of the body affected. The wearing of a flannel bandage round the bowels in the autumn will often save a person from the diarrhœal attacks so prevalent during that season.

Rheumatic persons, as also those who, from debility or some other cause, perspire freely at night, would act wisely by sleeping in flannel garments and between blankets. In the case of the rheumatic, this precaution would often very materially lessen, if not keep off altogether, the severity and frequency of the attacks.

And now let me say a few words to those martyrs of fashion about the direful results that are sure to happen if they continue to study appearance before health.

I am sure I need not dilate to you upon the endless troubles that are certain to be the outcome of that most pernicious habit, tight-lacing. Common-sense must tell you that to so alter your natural figure, and so compress, squeeze up, and consequently misplace your internal organs, cannot but be productive of serious mischief sometime or other.

The number of petticoats that women wear during the winter, with the consequent number of waist-bands belonging to those garments fastened round the waist, are injurious, causing congestion of those important internal organs in this region. A whole flannel undergarment, to cover the body and extremities, would be far warmer, and certainly far healthier. If petticoats are worn in numbers, be sure and see that the waist-band, instead of being fastened round the waist, is fastened round the hips, just at the upper part of the large bones of the pelvis, which can readily be felt, and no harm can then occur from pressure.

The continually changing fashions with regard to bonnets is most conducive to all sorts of throat affections, neuralgic attacks, &c. One year we find small bonnets, hardly covering the head, and with no strings, worn; and the next the fashion is to wear a large, warm headgear, with possibly wide ribbons tied under the chin; the latter probably being fashionable in the summer and the former in the winter, I suppose as a fair specimen of the perverseness of human nature.

The fashionably-made boot makes the foot look so nice, and the temptation to have a pretty foot is so great, that, in spite of the experience of the ill-effects from wearing tight boots, the evil is still indulged in; and what is the consequence? In the first place, corns for certain; possibly, too, bunions; then the toes become contracted, the joints of the foot deformed or even diseased, and the tightness of the boot causes cold feet from interrupted circulation. The high heels on boots are also most prejudicial to the wearer, for by their use the weight of the body is distributed on the wrong part of the foot.

Then, again, fashionable boots are generally made with thin soles, and the result is, if the ground be at all wet, damp feet, and this is often the actual cause of a severe cold. Therefore, if you want to keep your feet in a healthy state, and furthermore want to avoid colds and their consequences, be sure and have boots comfortably large enough, with low and broad heels, and soles of a reasonable thickness. For wet weather and winter use, a few nails in the boot help very materially to keep the feet dry, by raising the sole a little from the ground. In being measured for boots, see that the shoemaker takes your measure while your foot is on the ground, with your weight upon it, for there is a considerable difference in the width of the foot when resting your weight upon it, and when the weight is taken off.

Be always careful in the choice of waterproof cloaks, &c., which I allow are almost necessities when a person has to be about much in wet weather. See that they do not fit at all tightly, and so confine the perspiration. Nothing can be better than the Inverness-shaped waterproof, both for men and women; and I myself know that since I have worn one of these I have never had that weary and languid feeling that always came over me when I used to wear the ordinary waterproof coat.

Referring, again, to the question of wearing flannel next the skin, let me impress upon you the necessity of not leaving flannel under-garments off in the summer, for it is especially during that time of the year, when the skin is so freely perspiring, that, by having linen next the skin, colds are so often caught.

Last, but not least, if ever you get wet, either thoroughly or partially, delay no time in changing your damp things, and rubbing your skin well dry. Nothing is so dangerous as remaining in damp, wet clothes, more especially if you have been exerting yourself. This is a golden rule that cannot with impunity be broken by any single individual.

The book is divided into chapters dealing with the management of the mother's health, and with the welfare of the child. There is hardly a detail incidental to the health of both mother and infant, which is not duly noticed in this little work, the value of which should ensure it a place in the family medicine-chest as a true "friend in need" in any emergency, and in the ordinary conduct of the household life. We notice one error (p. 184) where the disease known as "Rickets" has been misprinted "Ricketts."

The "Ambulance Lectures" (3) written by Dr. Weatherly have attained a deserved success. The instruction given in this manual is that imparted by the author to ambulance classes. We think Dr. Weatherly might with advantage have omitted in a manual of ambulance such details as those given regarding "Digestion" and the "Nervous System." There is really little need for such information in a course of ambulance instruction, as the topics have only a very remote connection with the treatment of emergencies. Our experience of ambulance work has been that the fewer details of extrinsic nature which can be imported into such instruction the better. Persons unacquainted with anatomy and physiology are, in the first instance at least, most likely to appreciate ambulance instruction thoroughly, only when they are not troubled by too many extraneous facts.

The treatment of common accidents and injuries is described in a fashion which should be readily appreciated by any intelligent reader, and the illustrations with which the book is provided assist the comprehension of the details treated of in the text. The section on "Poisons" is, however, very deficient. Dr. Weatherly adopts a technical classification of poisons for which there is no need. People called in to treat a case of poisoning are not at all likely to trouble themselves about the class of poison in question. What they require is, firstly, to know the poison which has been swallowed, and the antidote therefor. If Dr. Weatherly had contented himself with giving the names (common and technical) of the ordinary poisons in one page, and with placing opposite each poison in another page its antidote, his work would have been infinitely more useful than as it at present stands. In the section on "Choking" (p. 62), the author does not distinguish between a foreign body in the windpipe or air passages and one in the gullet; and in sunstroke treatment we do not find that special mention of continuous cold applied to the nape of the neck, which the topic deserves. Excepting these, and a few other particulars, this little book may be commended. It cannot, however, hope to supplant such a complete manual as that of Esmarch, so favourably known through its translation into English by the Princess Christian.

Sanitary Appliances, Etc.

ELECTRICAL APPLIANCES.

The Anglo-American "Brush" Light Corporation (Limited), of Belvedere-road, Lambeth, S.E., have just re-issued their full and complete catalogue of electrical appliances. The catalogue forms a handy guide and compendium to the latest improvements and inventions, in the direction of electric lighting especially. All health-reformers are bound to feel highly interested in the extension of electrical power and resources, inasmuch as the substitution of the electric light for gas—to mention but one item in the list—would tend to remove from human surroundings one fertile source of atmospheric contamination, and one which renders the problems of ventilation more and more complex, as gas-illumination tends to remain the staple source of light. The enterprise of a company like the above-named corporation reacts upon questions of health as affected by lighting, in that, whatever measures can bring a healthful light into the homes of the people, are to be regarded as beneficial in the extreme. In respect of the completeness of their electric furnishings, we should think the above company takes a

place in the first rank of manufacturers. The "Brush" system has, of course, been long and favourably known as a means of electric lighting, and those who are disposed to instal "the light of the future" in their premises, cannot do better than peruse the suggestive and interesting pages of this catalogue.

We specially note the completeness of their new system of incandescence or glow lighting—the light produced by the bright glow of a carbon-filament in vacuo—the Brush Corporation having made their great reputation, and being more generally known as purveyors of the Arc light, as displayed on so many of our railway stations, streets, and warehouses.

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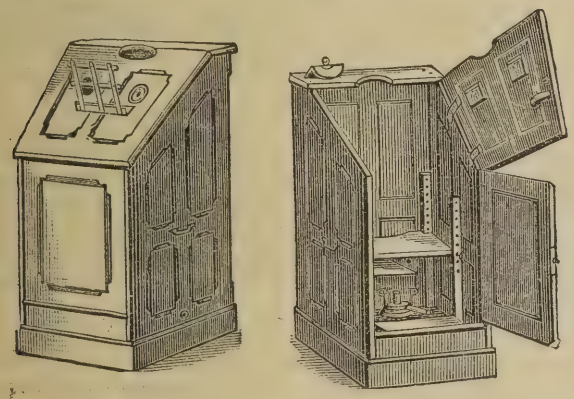

Bath shut. Bath open.

warmer, and with an adjustable seat, so that it can be used by children and by adults of different sizes. A book-rest is arranged conveniently, so that the time may be pleasantly occupied, and small doors are provided through which the hands may be passed in order to turn over the leaves of a book, or to wipe the face, or to remove a cigar from the mouth, &c.

The bath is heated by gas, or, where gas is not available, by a lamp specially manufactured, in which spirit is burned. It may be managed with the greatest ease without the aid of an attendant, being, in fact, quite as simple as an ordinary sponge or sitz bath. It is only necessary to fill the foot-warmer with hot water, covering it with a piece of flannel, to light the lamp, and step into the bath with a towel round the neck to prevent the heat escaping too readily. Ample ventilation is allowed, so that the body is not exposed to the action of vitiated air, since this is constantly being renewed from outside. The bath constitutes, in fact, a small ventilated hot chamber, the time spent in which may vary from ten minutes to half-an-hour, according to pleasure.

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Correspondents are requested to write on one side of the paper only The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

NIGHT-CAPS AND SLEEP AND DREAMS.

Sir,—I do not know how far it may be proper, or permissible, to differ—in print—from the Editor of Health, but as you seem not merely to repudiate my opinion, but also to impugn the accuracy of my *facts*, I venture to remind you that the brain and the outside of the cranium are supplied with blood respectively by two arteries which are branches of the common vessel, the internal and external carotids, which are subdivisions of the common carotid. If the neck were exposed so as to contract the common carotid, there would be no effort of the valves, I hypothecate, in the supply of blood to the brain; but, as a matter of fact, the whole body is covered with bed-clothes, and these are huddled up round the neck as high as the ear, and then the head proper is exposed to a lower temperature, which of late has been very low relatively. The result must be to contract the vessels of the temporal region, face, and scalp generally, thus delivering more than the due share of the blood which comes through the common or carotid artery to the internal carotid, at least on the side of the head that is uppermost. If this were not so, there would be nothing in the doctrines of "derivation" and "congestion." If you left the knee exposed, you would get "rheumatic" so-called—that is, *congestive* pain and stiffness in the joint. I believe that "dreaming" is more common when lying on the *back*, not, as is commonly supposed, because the back part of the brain is congested, which would simply give rise to a particular class of dreams, but because both external carotids are then commonly chilled and contracted. I am only concerned to justify my *reasons*, not to push my views.—Yours, &c., J. Mortimer Granville.

P.S.—In my little work on "Sleep and Sleeplessness," I have pointed out that sleep is *not* the *propter hoc* of anæmia, as demonstrated by Vulpian and myself, but, without doubt, partial anæmia is a necessity of dreamlessness, unless indeed congestion be so extreme as to arrest consciousness by pressure.

[Readers of Health know that our editorial policy has always been that of affording full opportunity for free discussion. In this spirit we give Dr. Granville's letter due prominence. We must, however, frankly confess that we are unable to follow his reasoning when he speaks of the contraction of the blood-vessels of the temporal region, face, and scalp, &c. We have much pleasure in offering Dr. Granville space in Health for the fuller statement of his views, which, we are certain, will interest our readers. As these views at present stand expressed, we fail to see both their physiological correctness and their practical utility.—Ed. *H.*]

QUERIES AND ANSWERS.

GENERAL.

[Many replies have been crowded out through pressure on our space. These will be duly noticed in our next number.]

G. Airey.—If you had perused our remarks carefully, you would have found that we specially agreed with Dr. Richardson, that hanging, in the true sense of the word, did not involve dislocation of the neck. Hanging, pure and simple, kills by suffocation. Fracture of the spinal cord is a direct nervous injury.

C. C.—We do not know the journal. Inquire of Heywood, Manchester.

X. Y. Z.—Doubtless a misprint—at least, we have never heard of the firm.

Benedictus.—A quack firm. Beware of them; they are well-known to the police, we believe. If they annoy you further, place the matter in the hands of a solicitor.

C. Archer.—No need to trouble; there was no danger.

J. Thomson.—The lime-salts go chiefly to build the bones. Yes;

the bones of birds contain a very large percentage of phosphate of lime. "Periosteum" is the membrane covering the bone, and which possesses bone-forming powers. Chloride of sodium, or common salt, exists in relatively large quantity in the sweat.

ONTARIO.—Climate suitable and well adapted for you, we should think.

ANDERSON M.—See reply to "Benedictus," above.

B. G. E.—Dangerous as a cosmetic. We believe in time the use of cosmetics, however harmless, tends to injure the skin.

CORDIAL.—For the warts try a little aromatic vinegar cautiously applied, so as not to touch the surrounding skin.

P. PRESTON.—*Fer Bravais* is an elegant preparation of iron, which is unrivalled as a tonic. Its use is not attended by the constipating effects of ordinary "steel drops." This is why it is preferable to other preparations.

CECIL AUSTIN, G.—Read our recent papers on "Electrical Appliances," by Mr. Carpenter. All the "Restorers" we have seen (and we have seen most of them) are pieces of unblushing quackery, which do not evolve electricity, and which depend for whatever virtues they possess on the flannel of which they are composed.

UNDECIDED.—Try the former, by all means.

J. ARNOT.—Write to Mr. Flack, 74, Great Queen-street, W.C., for Syllabus of Dr. Wilson's Lectures.

SANITARY.

J. TATLOCK.—About 15 or 16, we think.

ABERDONIAN.—Condy's "Fluid," or "Sanitas"—use one or the other, but do not mix them.

EXCELSIOR.—Try the first-named. It will be found good.

BRIGHTON.—About 3 grains organic matter are excreted in twenty-four hours from an adult's lungs; but this matter is highly deleterious to health; and forms the substance which predisposes as a breeding-medium to typhus-fever.

MEDICAL.

E. SMITH.—Give up smoking at night for a time. Cleanse teeth and mouth at night, and take a little "Æsculap Water" or "Freidrichshall" in the mornings as a mild aperient. Look well to your digestion.

SPERO MELIORA.—The causes of such a condition are very numerous and varied—so much so, that it is difficult, without personal examination and full history, to say anything definite about the matter. If you care to send us a stamped addressed envelope, we will send you particulars which may be of service. Restate your case if you write again.

J. R. (GLASGOW).—You are foolish in your distrust of doctors, who see cases like yours every day. We should recommend you to live well; take a teaspoonful of Fellow's "Syrup of the Hypophosphites" in a wineglassful of water, thrice daily before food; to sleep on a hard mattress; to avoid fluids late at night; cold sponging in the morning; and rest. You will get quite well if you persevere in treatment recommended.

HEYWOOD.—For a time employ the tonic as recommended to "J. R." above, and follow the other items of treatment therein detailed.

W. J. B.—Your affection is rather a curious one. Have you ever suffered from gout or rheumatism? Pending your reply, we should advise you to wear very roomy boots (not elastic sides), and to try the effect of bathing the feet frequently each day in tepid water.

C. J. COGAN.—You are in need of rest. Our best advice is not to make yourself an example of educational "overwork." Go early to bed; take plenty of open-air exercise; and don't be over-anxious about your work. You ask us really to cure a condition you are daily begetting by your mental strain.

W. THACKARA.—Wear a flannel bandage across the loins and live generously. The tonic you name will do you good. A little cod-liver oil, daily, will also be of service to you. If not improved, write again, specifying habits, symptoms, &c., more fully.

W. F. GUY.—Your case is one for examination by a surgeon. There are evidences of some slight inflammatory action, which should be medically attended to. You will most likely be prescribed a belladonna lotion, rest, and a suspensory bandage. But you should see a surgeon without delay.

VICTOR.—See advice to "J. R." above. Your entire change of living may have made you a little weak; but there is no cause for alarm. Follow advice as above given.

U. B. E.—Tie the hands to the bed; or fasten them in some way which will not cause pain or prevent sleep. The cure must be a mechanical one of this description. Avoid fluids late at night.

X. Y. Z.—1. Your mother should see a physician. The "shortness of breath" may depend on a number of causes—the special cause only a personal examination can detect. 2. Try the lime pills recommended to "Ninon" in HEALTH, No. 37, and wash the skin with tepid water and Pear's soap frequently.

W. BONSER.—State your symptoms more fully, and we shall be glad to advise you. For the symptoms you name in your letter, we fancy a Pulvermacher's Belt will do good. Thanks for your good wishes. The second person named in your list is a notorious quack. Have nothing to do with him. The others are suspicious. Pulvermacher's are genuine electrical appliances.

CLERK.—We think you might, with advantage, take a little "Pepsine" along with your food; and for a time the tonic recommended to "J. R." in present number of HEALTH. Let us hear how you are in a week or so again.

SYLVIA.—Don't let the acid touch the neighbouring skin. Give up its use, and, after a day or two, apply aromatic vinegar to the wart.

CROMWELL.—We think your case one for rest (absolute, if possible, for a time); great care in avoiding digestive derangement and constipation especially. No medicines should be taken whatever, unless under your doctor's orders; as, in cases like yours, tampering with drugs is quite inadmissible. You seem fairly well now—rest is your sheet-anchor.

SCRUTATOR.—The idea that the body "changes" every seven years, or at any other period, is a popular delusion. Read any text-book of physiology (Huxley's, for example), and you will find that life is really a constant series of changes, which proceed every minute you live. Changes of chemical and physical kind are always going on within the body, and the very fact that you require food daily is a proof of this. Read the earlier articles in HEALTH by Mr. Manson, on "The Body and its Structures."

G. T.—Take the tonic recommended to "J. R." in present number of HEALTH, and live generously. No other treatment needed. Cold sponging might also do you good.

E. RICHARDSON.—See advice to "G. T." above. If not cured, write again.

MARJORY.—The affection you name may arise from a variety of causes. Generally speaking, it is a symptom of low health or of some internal trouble, rather than a disease. As a first advice to you, we should recommend you to see well to your general health. See to your digestion; avoid constipation; and use injections thrice daily of 1 part of "Condy's Fluid" to, say, 10 or 15 of water. Take 15 drops of *Fer Bravais* in a little water thrice daily, and if not better, write again.

ROSE.—Give up all stimulants for a time by way of experiment, and take the following mixture:—Carbonate of ammonia, one drachm; bicarbonate of potass, one and a half drachms; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Let us hear how you are in a short time.

G. ELLIOT.—Try the following, and report how you are in a short time:—Bitartrate of potass three drachms, infusion of buchu six ounces; a tablespoonful thrice daily. Live plainly, rest much, and take a hot bath every other night for a time. Above all, avoid stimulants, cold and wet feet.

E. H. H.—To your daily dietary we should feel inclined to add, for dinner, a little strong soup made of Brand's Beef Essence or similar preparation. We think you require such an addition to your diet. The climate which might suit you best would be a southern one. New Zealand or Australia for preference, or even the southern English coast, as you are not a confirmed invalid by any means. You might also (in winter) try the effect of a little cod-liver oil (or the emulsion), continued throughout the cold weathr, both as a tonic and a heat-producing food. Glad to be of any further service.

PREMATURE GREYNESS.—You should know and recognise that all hair-dyes are objectionable more or less; but where necessity of any kind exists for the use of a dye, the following may suit you:—Free the hair well from all grease, by washing with Eau de Cologne and water, or yolk of egg. A permanent brown colour can be produced by the following process:—Dissolve four grains sulphate of copper in an ounce of water; and dissolve also, separately, the same quantity of ferrocyanide of potassium (a poison) in an ounce of water. Apply them to the hair alternately with a piece of soft sponge. "Condy's Fluid" is also used as a hair-dye to produce a brown colour. We are not acquainted with the use of the dye you name.

EDINBURGH.—You do not give a clear account of your symptoms, but as we understand your case (a common one, unfortunately) we should say you ought to see well to your general health. Take the tonic recommended to "J. R." in the present No. of HEALTH; use injections of "Condy's Fluid" (1 to 10 or so of water) for a time, and let us hear how you are later on.

EN AVANT.—No; the tonic you are taking is eminently serviceable, and should be taken alone. You should see well to your general health. The medicine should be taken for a week or two, and then stopped.

HUSBANDMAN.—Clothe warmly; avoid constipation; see that no

[*Continued on page* 224.

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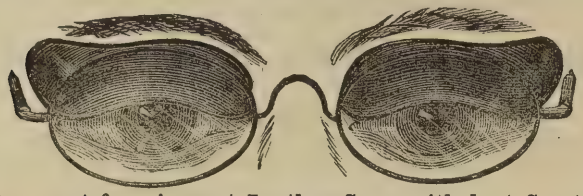

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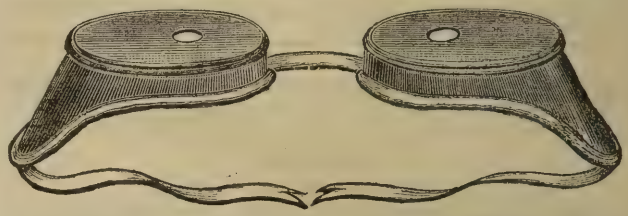

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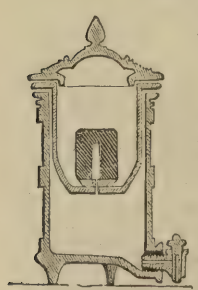

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 11, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

IT would seem probable that we are liable to contract serious disease from inhaling sewage-gases, even as these gases escape from the sewers into the fresh air of our streets. A police-constable, who had been placed on duty near an open sewer-ventilator, died recently in the Croydon Infirmary of typhoid fever. The source of infection was believed to be the sewer-ventilator aforesaid. The man must have breathed in typhoid germs which escaped from the drain, and was thus infected. There seems no reason to doubt that typhoid fever—which is pre-eminently the fever of the drains—may be caught in such a fashion; and the moral of this recital is that which teaches us, in any case, to avoid standing by sewer-ventilators or drain-escapes, wherever situated.

✣ ✣ ✣

THE vexed question of insanitary bakehouses is now likely to be dealt with in an effective manner. From time to time the public have been horrified by accounts of bakehouses which were enshrined amongst filth, and whose condition was simply deplorable from a sanitary point of view. The "Retail Bakehouses Act" lays upon rural and urban authorities the duty of seeing that bakehouses are kept clean, well-ventilated, and otherwise adapted for the sanitary conduct of the trade pursued therein. One important provision, at least, is contained in this Act. It is enacted that in any bakehouse which has been let or occupied since June 1 of last year, no closet of any kind shall communicate directly with a bakehouse. The cistern of the bakehouse is also to be distinct from that supplying the closets, and no drain or pipe, in connection with sewage, is to open in any way inside the bakehouse. With such ample provisions for securing the safety of the conditions under which "the staff of life" is prepared, we should hear less of the abuses to which of late years the baking trade, in respect of insanitary premises, has been liable.

✣ ✣ ✣

THE decease of Mr. Holloway, of "pill and ointment" fame, has given rise to not a few comments, kindly and the reverse, on the manner in which he attained his gigantic fortune. There can be no question that the practice of making and of selling a medicine which is "warranted" to cure diseases of the gravest kinds and of widely different natures is one highly to be deprecated. So long as the public are not educated in the common facts of physiology and health-science, and so long as people remain ignorant of the nature of disease, so long will quackery flourish, and so long will people pour medicines of which they know little into bodies of which they know less. All "patent" medicines are not to be classed, however, in the same category. There are medicines of this kind, the exact composition of which is a secret, and which are prescribed daily by physicians. But in such cases we do not find one and the same medicine "puffed" to death, and warranted to cure every ailment from cancer to indigestion, and from a headache to scrofulous disease. After all, it is the educated common-sense of the public which alone can prove their surest protection against quackery. Whenever people begin to understand that the cure of disease is a science—or rather a collection of sciences—and that no one substance can possibly be a panacea for every ill, they will refuse to swallow quack nostrums wholesale, and when ailing will take their medicine, as they take their law, from qualified sources.

✣ ✣ ✣

AN apt illustration of the obvious harm which the incautious use of "patent" medicines compounded of deadly drugs may effect, was afforded in London the other day, at an inquest held on the body of an infant seven months old. The child had suffered from whooping-cough, and a patent medicine, named "Holt's Specific" (formerly called "Hooper's"), was administered in teaspoonful doses, repeated every four hours. Four doses were given, the child dying after the fifth dose had been administered. Now, each dose was proved, by analysis of the mixture, to have contained half a grain of antimony, in the shape of "tartar emetic;" and the child was, therefore, found to have been poisoned by this drug. The coroner's jury remarked on the danger which attends the sale of such medicines, but it appears the law is powerless to stop such sale. The "Specific" was purchased from a woman who kept a confectioner's shop, and this latter fact only aggravates the evil, when we reflect on the wholesale distribution of poison which thus takes place. As an additional feature in the case, which seems to demand attention from legislators, may be mentioned the fact that a Mr. Curgenven, who gave evidence at the inquest, remarked that he had seen two children suffering from the effects of the same medicine. Death had resulted in one of these cases, while the other case had a narrow escape.

✣ ✣ ✣

A CORRESPONDENT of the *British Medical Journal* gives the following formula for making "alkaram"—a preparation much used, in the form of smelling salts, as a preventive of, and cure for, colds in the head:—Carbolic acid, eight minims; sesquicarbonate of ammonia, two drachms; powdered wood charcoal, two drachms; oil of lavender, six minims; compound tincture of benzoin, one drachm; strong liquor ammonia, a sufficient quantity. Mix well; keep in a stoppered wide-mouthed bottle.

✣ ✣ ✣

SOME interesting statistics have recently been given regarding the employment of blind persons. Out of a population of 26 millions in England and Wales, 23,000 persons are blind. Of these, 14 (including two females) are employed as officers and clerks in the Civil Service, two

blind persons are prison-officers, and four are employed, in some capacity or other, in the police-force. Twenty-eight blind clergymen are returned as employed by the Church of England. Over 500 earn a livelihood as musicans, and 156 are engaged in "washing and bathing" employments. Four hundred are returned as blind farmers, and 600 as agricultural labourers; 20 are commercial clerks, and 16 are commercial travellers. There are 800 blind basket-makers, and 300 costermongers and street vendors of articles want their sight; while the unoccupied blind, and those of no trade (including children under five years of age) number 14,000. It is added that about one in 11 of he total is given as the proportion of those born blind.

* * *

We have received a letter, in which the writer maintains that to cause warts to disappear it is only necessary to moisten them with the saliva or "water" of the mouth each morning—while the person so applying the saliva is fasting—when the excrescences will in time disappear. Now, the composition of the saliva is perfectly well known. It consists of water, a ferment called *ptyalin*, a little fat, and certain minerals. The use of the saliva, besides moistening the food and rendering swallowing easy, is that of converting the starch of the food into dextrine and grape-sugar. That saliva, of itself, contains no substance capable of exerting a destructive action on a skin-growth is perfectly clear. An ingenious commentator suggests that possibly some of the mouth acids, which are abnormally present where teeth are in a state of decay, might prove the means of affecting the warts; but this explanation is a little too far-fetched to be at all feasible. Our correspondent alleges that when warts have been regularly moistened, morning by morning, with the saliva of a person fasting, they have disappeared. We are therefore brought face to face, in our opinion, with another aspect of "faith-cures" or "expectant healing." We shall be glad to hear the experiences of any other readers of Health on this point, which, of itself, is sufficiently curious to merit attention. But we would like to suggest that plain cold water should be tried in place of saliva as a wart cure. A friend of ours, placing a little water in a phial, presented the phial to a person troubled with warts, assuring him that the fluid—the nature of which was, of course, unknown to the patient—was a specific for the excrescences, and advising great care in its application, morning and night. The result was eminently satisfactory. The water was regarded as some mystic drug; the "faith-cure" was successful; and the warts disappeared. *Verb. sap.*

Milk is a sponge, and a dangerous sponge. It absorbs at once any deleterious matter, and is one of the most fertile causes of epidemics. In a paper by Mr. Hart, read before the Health Department of the Social Science Congress in Glasgow, he analyses fifty-three outbreaks of typhoid fever, seventeen of scarlet fever, and twelve of diphtheria due to milk. The milk epidemics in question had attacked in round numbers 3,500 with typhoid, 880 with scarlet fever, and 700 with diphtheria. These cases have all occurred within the last twelve years. Mr. Vacher, in a paper, says that nearly 100 epidemics have been traced to milk.

The Hospitals Association.—The inaugural meeting of this Association will be held, by permission of the Lord Mayor, at the Mansion House, London, on Friday, February 1, at three o'clock. His Lordship will preside Further particulars will be shortly announced.

Original Essays

"Life is not to live, but to be well."—*Martial.*

MEAT TEAS.

By M.D.

The topic of "meat teas" does not at first sight appear to be an interesting or important one; but considering the common nature of the practice of combining dinner and tea, it seems worth while to direct attention to a recent deliverance on this subject. The habit of uniting dinner and tea to form the familiar "high tea," is greatly in force with many, who, unable to dine solidly in the middle of the day or in the afternoon-interval of the day, depend for sustenance upon the meal in question as a chief means of support at the close of the day's labours. Physicians and physiologists have always condemned "meat teas," on the plain ground that the combination is one difficult of digestion, and opposed to what may be called the natural chemistry of food assimilation. In the correspondence columns of this journal, the warning "avoid meat teas" has over and over again been given. It is satisfactory to find that Dr. James Fraser, in the *Edinburgh Chirurgical and Pathological Journal*, has been able experimentally to show that the warnings against the popular "high tea" may be founded on sure and scientific grounds.

To rightly understand the position assumed in such an investigation, we must remind our readers that amongst the chemical principles composing our bodies, and demanded by our bodies in the foods we give them, the *nitrogenous* or *albuminous* substances form a most important group. Albumen, represented by white of egg and allied substances (including the living matter, or *protoplasm*, of our frames), forms at once the type of these nitrogenous compounds, and of the chief "flesh forming," or, as they are also called, "nitrogenous" foods. Such foods consist of four elements—to wit, carbon, hydrogen, oxygen, and nitrogen. Dr. Pavy, in his classic work on foods and digestion, remarks that all bodily work is associated with the consumption, elaboration, and breaking-down of nitrogenous foods. Nitrogen appears to be that element in our food on which depends the due regulation, substance, and energy of the most living parts of our bodies. Although plants possess nitrogenous compounds as part of their chemical belongings, and although some plants feed, like animals, on a dietary which includes a large amount of nitrogen, yet the vegetable world, on the whole, does not so markedly depend on nitrogenous foods for support as does the animal creation.

The food principles which contain nitrogen are represented by such substances as the *casein* of milk and cheese, the *gelatin* of bones, the *fibrin* of blood, the *gluten* of flour, &c., in addition to white of egg (or ordinary *albumen*) wherever found. Albumen itself, derived from animals or from plants, is thus, in plain language, the representative of a family of substances which, though not capable of supporting our frames by themselves, nevertheless constitute the chief group of foods demanded for our support. The second class of our foods is, in fact, called the *Non-nitrogenous* division, because the element nitrogen does not enter into the composition of this group. In the latter division we include the starches and sugars, the fats and oils, water, and mineral matters. Starches and sugars, together with fats and oils, consist of carbon, hydrogen, and oxygen combined in different proportions; water consists of hydrogen and oxygen alone; and the minerals (lime, potash, soda, iron, &c.) necessary for the

support of life possess, of course, their own and characteristic composition.

When we take such a fluid as beef-tea or beef-essence we receive a substance whereof the nutritive part is chiefly albuminous or nitrogenous in its nature. Such fluids (and the same remark holds good of flesh itself) consist besides, of water, minerals, and fats, but it is to the nitrogenous parts of them that we look for the pure nutritive result involved in their digestion. Hence the interesting question raised by Dr. Fraser in his recent communication may be practically stated as involving the question: "What are the effects of the common beverages of life on the albuminous substances which, in the varied forms of meat, fish, &c., we habitually receive?" The common beverages in question are, of course, primarily, tea and coffee, and to the list must be added cocoa and cocoatina. In tea and coffee, as is generally known, there is, practically, no nitrogenous matter, whereas cocoa does contain such material. Tea, coffee, and cocoa, however, owe their stimulating properties to the presence in each case of a special principle, called *theine* in tea, *caffein* in coffee, and *theobromine* in cocoa. It may be said, indeed, that it is for the effect of these substances on the body that we value these beverages. In their own way, they are highly important additions to our list of food resources; and it is, therefore, of the utmost importance that we should know how to utilise them to the fullest advantage, and to avoid their employment in any way or fashion by which their utility is impaired.

Dr. Fraser tells us broadly that tea, coffee, and cocoa all retard and interfere with the digestion of albuminous or nitrogenous substances, except in four cases. He finds, for example, experimentally, on the favourable side of the "meat tea" question, that coffee does not appear to delay the digestion of ham, and that the digestion of white of egg is not interfered with by this beverage. Again, he informs us that the nitrogenous parts of that highly-important article of diet, fish, digest amicably and peaceably enough along with both cocoa itself and with cocoatina. The practical outcome of these observations would, therefore, seem to consist in the remark that the ordinary breakfast habits of the nation in taking fish along with cocoa, or ham and egg with coffee, are justifiable from a physiological and chemical stand-point. The presence of salt in meat, curiously enough, was found to prevent digestive delay, in the case of meat and the common beverages above noted being taken together. Again, concerning the degree in which the beverages act on foods which may be taken with them, there seems to be certain important variations. Cocoa is found to retard digestion most; tea comes next in order; while coffee is the least injurious in this respect. No less interesting is the observation, that the addition of cream and sugar seems to increase the injurious effect of cocoa on digestion, while such addition reduces such action in the case of tea. The latter beverage is credited with causing flatulence, and, as physicians know only too well, is responsible for a vast deal of the digestive trouble which stalks abroad amongst the working-classes especially.

The practical lessons deducible from Dr. Fraser's experiments are of extreme value. In the first place, they teach us broadly that "meat teas" are a mistake, and that those who indulge in these meals are liable to qualify themselves for indigestion produced by the plain chemical considerations already detailed. In the second place, we learn that fresh meat especially should never be taken along with tea, coffee, or cocoa, seeing that the influence of these beverages on this latter description of food is highly marked and of distinctly injurious character, in so far as healthy digestion is concerned. A third point of importance deserves to be noted, however, in the fact that the practice of taking coffee or tea immediately after dinner is probably deleterious, or at least, can serve no good end in expediting digestion—the practice in question, it might be added, however, has probably a more intimate relation to the correction of the effects of wine, than to the stimulation of digestion. A fourth piece of advice may, lastly, be tendered, to the effect that we should bear in mind that tea, coffee, and cocoa possess their own value and special use as beverages. Tea and coffee are mere adjuncts to food—they are not foods in themselves. They may be taken in moderation by those who are well nourished otherwise, but should never be drunk along with meat. Cocoa (with milk and bread) constitutes of itself a nutritious dietary; seeing that it contains nitrogenous matter of its own. The great lesson, however, to be borne in mind is, that we should not associate the beverages in question with meat, and with the more solid meals of the day.

A SIMPLE METHOD OF PRODUCING LOCAL LOSS OF FEELING.—Dr. Cheize relates a simple procedure adopted by him in a case of ingrowing toe-nail, requiring immediate operation, at a time when he had no apparatus at hand. He saturated a little piece of lint with ether and placed it on the toe. He then projected the air from an ordinary pair of hand-bellows upon the lint until the ether was evaporated. This was repeated two or three times, when anæsthesia was so complete that the nail was removed without the patient's knowledge.

THE DISEASE OF THE MONEY-COUNTERS.—A Washington correspondent, visiting the Treasury Department, noticed that many of the women employed in counting bank-notes looked ill, and had sores upon their hands or heads. The superintendent gave the following account of the trouble. "Very few," he said, "who spend any considerable time in counting money escape the sores. They generally appear first on their hands, but frequently they break out on the head, and sometimes the eyes are affected. We can do nothing to prevent this. All of the ladies take the greatest care of themselves in their work, but sooner or later they are afflicted with sores. The direct cause of the sores is the arsenic employed in the manufacture of the money. If the skin is the least abraded, and the arsenic gets under the flesh, a sore will appear the next morning. The habit that every one has of putting the hand to the head and face is the way the arsenic-poisoning is carried to those portions of the body. "See, here," said Mr. Rodgers, stopping by the side of a young lady, and picking up a glass vessel containing a sponge, "this sponge is wet, and is used to moisten the fingers while counting the money. You see how black it is. That's arsenic. Every morning a new piece of sponge is placed on the desk of each employée, but before the day is over it is as black as this. I have known half-a-dozen cases where ladies have been compelled to resign their positions. There are three ladies who were here six years before they were afflicted with sores. About three months ago they were so visited by them that they had to quit work. They have been away ever since, and the physician's certificate in each case says that their blood is poisoned with arsenic."

"LOCHINVAR" OLD SCOTCH WHISKY.—For invalids who are ordered whisky, or for those who use this valuable spirit to promote and aid digestion, it is important that the whisky *be well matured by age*. The "Lochinvar" is a blend of the finest Highland whiskies, and is *guaranteed five years old*. Sold by all wine merchants. Wholesale only of HILLS & UNDERWOOD, Eastcheap, London.—[ADVT.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

To Remove Hairs.—Sprinkle over 100 parts of good quicklime, about 50 parts of hot water, and, when slaked, triturate with 200 parts of cold water. Place in a suitable flask, and pass into it the hydrogen sulphide generated from 200 parts of sulphide of iron and 200 parts of sulphuric acid gradually introduced into the generator. This preparation must be immediately placed into small vials, and securely sealed; but even then it will lose its virtues after a few weeks. This was originally recommended by Bœttger, but is sometimes known as "Martin's Depilatory." This paste is to be spread over the hairy skin to the thickness of one-sixteenth of an inch, and allowed to remain for ten minutes, when it is to be removed with a wet sponge. When allowed to remain too long, bad sores are apt to result. Another, known by the Turkish name "Rusana," is composed of 50 parts of quicklime, 30 parts of starch, and 5 parts of orpiment. This is to be made into a paste with water, and employed in the same manner as the foregoing. Of late years dermatologists have resorted to a method for removing hairs which is less likely to be followed by disfigurement, and is more radical in its effects, though involving more labour, and requiring the aid of a skilful person. A fine platinum needle, mounted in a suitable handle, serves as one electrode for a galvanic battery, the other electrode being a moistened sponge. The sponge is placed upon any convenient part of the body, and a single hair, being grasped with forceps, serves as a guide to direct the needle to the bottom of the hair follicle. After the needle has been introduced, connection of the galvanic circuit is made, and, after a few minutes, the root of the hair is destroyed by electrolysis, as shown by the escape of gas and by loosening of the hair, which comes away in the grasp of the forceps.

Cleansing Glass Vessels.—Alexander Müller, of Berlin, after speaking of the various methods in vogue for cleaning glass vessels, as, for example, sand (which is objectionable, as it scratches glass), shot (good, but should be followed by a wash of dilute nitric acid, to get rid of lead), brushes, copper scale (also good, but requires subsequent rinsing with some dilute acid), bits of paper or linen, wood ashes, salt (especially rock-salt), gypsum, and marble-dust (very good), ground bones (likewise excellent), he concludes as follows:—Chisel or tongue-shaped pieces are cut from thick pieces of india-rubber, and a sharp brass or platinum wire is fixed into the thick end to serve as a handle. With this washer and its flexible handle, we are able to "lick" out, to a certain extent, any kind of a bottle. For beakers and capsules, we greatly prefer it to the hair pencil and feather commonly used; for, owing to their fibrous structure, the precipitate gets entangled in them, while they also lose some of their nitrogenous particles, which would affect the accuracy of careful nitrogen determinations, as, for example, in water analyses. Finally, to clean glass or porcelain vessels from the greatest variety of adherent organic substances, he recommends a mixture of bichromate of potassium and sulphuric acid as superior to ether, alcohol, benzin, &c.

"Pain-Killers."—From 100 parts of capsicum make 600 parts of tincture; add a solution of 22 parts of soap in 100 of water; add thereto water of ammonia, 300 parts; camphor, 30 parts; oil of rosemary, 10 parts; oil of lavender, 10 parts; oil of thyme, 10 parts; oil of cloves, 10 parts; oil of cinnamon, 1½ parts; sugar colouring, q. s. Mix and filter. Another "Pain-Killer" is made as follows:—Myrrh, 2¼ lb.; capsicum, 10 oz.; opium, 8 oz.; benzoin, 6 oz.; guaiac, 3 oz.; camphor, 10 oz.; alcohol, 5 gals.

To Preserve Fruit fresh for a long time—it is said for years—it may be placed into sand which has previously been carefully washed, dried, and then dampened with cognac. Care must be taken that the fruits, which should not be overripe, nor unripe, do not approach each other too closely. The earthen or wooden vessel in which the sand is contained must be kept well covered in a place which is neither too damp nor too warm.

Preserving Indiarubber Goods.—U. Kreusler, of Bonn, and E. Budge, of Constantinople, have obtained a patent for a mode of preserving rubber goods from hardening and cracking, which consists in steeping them for about a minute in melted paraffin, and drying in a room at a temperature of about 100 deg.

To Clean Brass Scale-Pans.—Pour sufficient ammonia in the pan to cover the bottom, and rub briskly till dry with a handful of dry pine sawdust. For very dirty pans, take about a drachm of bichromate of potash, powder it in a mortar, mix it with two or three times its bulk of concentrated sulphuric acid, and add twice as much water. With this rub the pans (having a care for the fingers), rinse well, and finish with rotten-stone.

MORE ABOUT KOLA NUT.

(THE CURE FOR DRUNKENNESS.)

In the Bulletin of the *Société Géogr. de Marseille* for June, Heckel gives new information, with a *résumé* of old, in regard to the African nut known as Kola, or Guru. This seed, which is hardly to be called a nut, has a kernel about two inches in length, somewhat like that of a peanut, with a groove instead of a projecting point at the germinal end. It may be white or red, or both, to the number of four or five in the same rough brown pod. It is the product of a tree of the family *Sterculiacea.* The genus has been called Sterculia, Kola, &c., and there are several species or varieties. This nut, or seed, is remarkable on account of containing (besides glucose, tannin, and a bitter principle) caffeine and theobromine (the principles of coffee and cocoa) in large proportion. Among the African tribes it takes the place of tea and coffee or cocoa — products of plants belonging to very different groups, but valued for the same essential principle. It has been used from time immemorial, and many singular stories have been current as to its effect upon the system, though little authentic information was at hand.

Kola is gathered twice a year, carefully shelled, and the bare meats are immediately despatched into the interior; carefully wrapped in green leaves to insure them from drying. They have to be carefully picked over every twenty or thirty days, and all defective ones thrown out. It is considered very important that they should be kept fresh and somewhat moist. However, as soon as they begin to shrivel and dry up, the caravan merchants dry them thoroughly in the sun, and pound them to a powder in a mortar. The seeds are worth twenty or thirty cents a pound at the place where gathered, near Sierra Leone; but they rapidly increase in value away from the original market. At Goree a single seed will be sold at six to ten cents, according to the state of the market. In the interior

the tribes on the Niger pay as high as one dollar per seed, and in times of scarcity a slave has been given for one seed. In the far interior, the Arab merchants frequently dispose of the powder for its weight in gold-dust.

The Kola is the stimulant of the African tribes, and is in order on every occasion. Among those peoples where the nut is not indigenous, nor yet too extravagantly dear, no transaction of any moment can take place without an exchange of Kolas. This is either in token of good-will or to "bind the bargain."

If two tribes ally themselves, they exchange white Kolas, this colour being always the token of good-will and peace. If war is declared, the announcement is made by sending red Kolas to the enemy. A request for a wife is accompanied by the present of a white Kola from the lover to the intended mother-in-law. The response favourable is by a seed of the same colour; a refusal, by a red one. The wedding present of the husband to his bride is incomplete without a certain proportion of Kolas. In the interior, where they are so valuable, the gift of one is considered a high attention, and, when given by a chief to a white traveller, takes the character of an assurance of protection. One of the chiefs of the Upper Niger sent Zweifel and Mousteir red Kolas wrapped in green leaves, as a sign that they would not be permitted to ascend certain sacred water-courses included in their programme.

In religious and judicial proceedings they are equally important. All oaths are taken on these seeds: the witness holds his hand over them, swears, and then eats them. An accuser demanding justice brings to the judge a little basket of rice with four or five Kolas upon it. The sorcerers lay great stress on the attractive qualities of this seed in drawing away evil spirits, sickness, and misfortune. Friends place with the dead some Kolas, that he may safely endure his "long journey;" and, to crown all, the Mahometans declare it to be a fruit of divine origin, brought to earth by the Prophet himself.

The nut is chewed as if it were tobacco; the powder is eaten. The taste is sweet, astringent, and bitter in succession. Europeans as well as negroes are devoted to it. It not only sustains the system under the greatest fatigues, even without food and for long periods, but it is also a certain preventive of the dysenteries and deadly fluxes which render that region so unhealthy. The powder makes foul water drinkable and harmless.

Messrs. Heyman & Phillips, 15, Clifford-street, London, W., supply the nut for medical and other purposes.

Owing to his hard life, the conflict with his circumstances, and his want of foresight, the Eskimo soon becomes a physiological bankrupt; and, his stock of vitality being exhausted, his bodily remains are covered with stones, around which are placed wooden masks, and articles that have been useful to him during life; or they are covered with driftwood, and the weapons and personal effects placed near by, in response to the sentiment commemorated by Schiller in "Bringet hier die letzten gaben."

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

FROM SUPERSTITION TO HUMBUG.

Under this title our excellent American contemporary, *Science*, has the following sensible remarks on the relations of superstition to charlatanism:—

"It is related that especially fortunate English commanders in India have encounted a tendency among the ignorant natives to exalt them as more than human beings. It is not strange that a benighted and superstitous populace, astonished by exhibitions of power to it incomprehensible, should, for a time, turn from its own hazy gods to new and visible wonder workers. A somewhat similar revolution appears to accompany the progress of physical science. What its friends have to contend with at present is not so much indifference or hostility, though these are not altogether lacking, as a too implicit and childlike confidence in the efficiency of scientific knowledge on the part of those to whom its ways are in the main unknown. The real conquests of science have been so vast and unexpected, so much like the workings of magic, that people eagerly pay their homage to a power which, though mysterious enough to engage their credulity, accomplishes every day feats that witches, ghosts, and magicians performed only upon rare occasions. A genuine scientific man will disdain to abuse this confidence; but there are always camp-followers of the scientific army who will find in it their opportunity. It is curious to see how those who a generation or two ago would have been the believers in witchcraft and all things 'supernatural,' are now turning to be caught in the toils of scientific charlatanry. The wizard of the present day is an electrician. Electricity and magnetism have become literally words to conjure with.

"There is a certain progress in this, though not in itself a valuable progress. It is the advance from sheer ignorance to that little knowledge which is proverbially a dangerous thing. It is the advance from pure superstition in which men did not reason at all, to humbug, in which they reason from false or insufficient premises to wrong conclusions. It should be said in justice to the scientific charlatan, that he is frequently not dangerous, and is nearly always amusing. He possesses an audacity, a volubility, that, combined with his habit of blundering, make him a far more cheerful person to contemplate than his gloomy predecessor, the sorcerer. Take, for instance, the modern master of that ancient black art of divination by rods. A newspaper report makes a 'professor' of the science of 'magnetic geology,' as he calls it, speak as follows:—

> You take the ends of the forks and grasp them tightly in either hand, allowing that portion where the forks join to point upward. . . . When one walks over a mineral substance in the ground, the electricity ascends through the body into the hands and rod, and draws the central or connecting portion of the rod downward. When this occurs, minerals exist beneath the spot where you stand. If the rod begins to move as the person walks along, take particular notice of the spot where you stand when the movement begins. When the rod turns completely over, measure the distance from where it first began to move to the spot where it indicates minerals. This distance will give you the depth at which the mineral can be found.

"'Rabdomancy, or divination by rods, is as old as history,' some one recently remarked. The feature of this science peculiar to our age is the pretence of explaining it. That the method is still resorted to quite widely there can be no doubt. We read in a Vermont paper that a few

months ago the public authorities of Middlebury resorted to the rod when about to sink an artesian well. They then sank a shaft eighty feet at the spot designated, and there struck, not water, but flint. We have lately heard of a man who ascertains by the divining-rod the proper spot for grounding lightning-rods. We have never seen a statement of his theory in his own words; but it appears that he holds the doctrine that atmospheric electricity follows, or is controlled by, the course of underground electric currents. He claims, moreover, to be endowed with a peculiar sensitiveness that enables him, by walking over the ground with the forked stick in his hands, to detect the location of these currents. The last touch is given to this theory by the statement that it is necessary for the gifted manipulator of the rod to wear rubber boots during the operation of divining, in order that he may be insulated from the ground.

"In regard to the human body and the remedies for its ills, people have always been superstitious; and so, naturally enough, the number of 'electric' and 'magnetic' nostrums offered to afflicted humanity is very great. Their descriptions, however, are nearly always worth reading. Custom cannot stale the infinite variety of their absurdities. Here is a specimen which came to hand a few days since in the advertising columns of a college paper :—

> Labour, study, and research in America, Europe, and Eastern lands, have resulted in the Magnetic Lung-Protector, . . . which, . . . with the continuous stream of magnetism permeating through the afflicted organs, must restore them to a healthy action.

"There is a class of people who call themselves magnetic physicians—people who cure, in a modern way, by the laying-on of hands. They are apparently closely allied to the spiritualistic mediums, and evidently intend to use something more than a figure of speech in calling themselves magnetic. There is, for instance, in or near San Francisco, a certain Dr. H——, who gives people what he calls magnetic baths. He claims to magnetise the water for the baths by dipping his hand in it. He is said to have an extensive practice. We have heard that the notorious Slade, whose feats made such an impression upon Professor Zöllner, claimed to possess a literal magnetic power, enabling him to rotate the plane of polarisation of light.

"Whatever may be the case with these peculiar people, it appears that others, not especially superstitious, do believe themselves particularly endowed or charged with electricity, because, for instance, they succeed in drawing sparks from their hair or clothing during cold weather. Of course, some people do have drier hair, or drier skins, than others, and do, therefore, as frictional electric machines, surpass the majority of their fellow-mortals. Moreover, physiologists believe that in living bodies there exist slight electric currents capable of being detected by very sensitive apparatus. But apparently it is not with any intelligent reference to these exceedingly minute currents, or to an electric charge acquired by friction, that a man speaks when he offers to rub a weak or disabled arm because he is 'strong and full of electricity, you know.' The fact is, we do not know, and we wish the man would explain.

"It would appear that such terms as 'animal magnetism' and 'personal magnetism,' originating, no doubt, in metaphor, are sometimes taken almost literally. We have met one or two very intelligent people who seemed to have a vague idea that psychological problems might be attacked by means of the laws of electricity and magnetism. This list of frauds and delusions might be greatly extended. Enough has been said, however, to illustrate some of the kinds of error into which people are led by their ignorance of the results and methods of scientific research. The need of a wider and more intimate knowledge of physics in the education of all classes would, do doubt, be generally acknowledged. It should be observed, however, that the kind of half-knowledge of this subject, which is frequently obtained from newspapers, and even from public lectures and popular scientific books, is the very pabulum of such errors and humbugs as we have described. A woman hears a lecture on sympathetic vibrations, fundamental tones, &c., notes the trembling of a church under the music of the organ, and writes to her religious paper an enthusiastic letter explaining the fall of Jericho in a scientific manner—and all in the interests of revealed religion.

A man reads, or sees in a public hall, that two electrified pith-balls attract or repel each other. He learns that the human body may be charged with electricity. Straightway he begins, upon this basis, to explain the table-tipping feats of spritualistic mediums—a gross error hardly more respectable than the pure superstition of the veriest believer in ghosts. To make such errors impossible would require that definite, familiar knowledge of things in their quantitative relations which is hardly to be obtained without actual contact. It would require a laboratory training; and it is perhaps impossible to make provision for a very extended training of this sort in any scheme of general education.

"The tendency of the times, however, is toward the objective and experimental in teaching; and it is probable that the next few years will see considerable changes in the methods of general instruction in physics."

A correspondent of *Science* writes :—"Your editorial in Nov. 16 issue of *Science* might very appropriately have contained an account of the 'magnetic springs' which underlie this portion of the State of Ohio. From my residence three of these springs may be seen, at one of which a large bath-house has already been erected, where, during the present season, an average of forty patients daily tested the curative effects of the waters. These springs are found along the bank of a small creek and at the base of a valley, perhaps twenty-five feet in depth. The water, which contains less than a sixth of one per cent. of iron, is brought to the surface of the ground through an *iron* gas-pipe, and 'becomes so highly charged with magnetism that it will impart its properties to a knife-blade.' The village of Magnetic Springs, a few miles distant, has several large hotels, all of which are so crowded with guests that rooms must be engaged weeks in advance. Change of residence, rest, and good nursing have together effected a number of cures, all of which, of course, are ascribed to the magnetic properties of the water. Many of the guests return to their homes as disappointed as the little girl who, after drinking a glass of the water, said, 'I do not feel one particle magnified, and I think these springs are a humbug.'"

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

FEEDING AND LEARNING.

We commend the following remarks to School Boards, teachers, and parents :—"However we may approve of the Education Act of 1870 and its subsequent amending Acts, there is no doubt a fair case to be made out against the over-stringency of the Revised Code. We may take as evidence of this the letter of the National Union of Elementary Teachers to their lordships of the Education Department, lately published in the *Times*. The overtaxed child learns like a parrot; the overtaxed child, who is also very poorly fed, learns, we should be inclined to think, not at all. But to feed the unfed children on a large scale on charity would be a gigantic mistake. The struggling housewife would naturally, and, so to speak, rightly—as the choice is offered her—send her child to school unfed, and carry the difference to the credit of the week's account for expenditure in some other, perhaps more harmful purpose. The drunken, feckless, and weak would let their children get what they could of others and be thankful. And there are many other reasons. The question is whether, by less stringency in the educational requirements, the children would not learn more, be educated more, though, perhaps, instructed less; and then, whether simultaneously some plan of feeding those that require food is not possible on an ordinary self-supporting plan. This has succeeded (less cost of plant and management) out of London; why should it not be tried here on an entirely self-supporting basis? At Rousdon, Devon, Sir Henry Peek has arranged, since October, 1876, to provide for a school of 79 children. The average of solid food per child was almost eight ounces. Ten dinners have cost, on an average, 1s., including cooking, expenses and wear and tear. The girls assisted in the cooking, which was part of the curriculum of the school. The result is reported to have been most satisfactory, physically and educationally. At Farnell, also, a country parish near Brechin, with a population of 600, a hot mid-day meal of pea or potato soup, or Scotch broth, has been provided for six winters. The "plant" was purchased by voluntary subscriptions. The charge is ½d. per child, or 1d. for two. The supply is not restricted to a single bowlful. There was, at the end of last winter, a balance of 5s. 3½d.; but gifts of vegetables, value £10, were given, and the School Board were paid the cost, £3. 5s. The results, too, in this experiment are said to have been very satisfactory. In London the numbers would be larger. The demand for so many scholars' meals daily would be regular. The bill-of-fare need not be very often altered. A cocoa-house in a by-way, close to the school, might supply the breakfast of hot drink and a slice of bread. If other meals have to be provided, other similar arrangements might be made. Children often take their mid-day meal with them. The most shiftless parents give their offspring a penny or twopence, when to provide the breakfast regularly in comfort and at an early hour would be a moral effort beyond them. Many pennies are wasted in sweets—and worse—that might go in cheap meals, if there were a supply. At least, the experiment is worth trying. If it fail, it does not follow that the meals must be given in charity. The desired result might follow from indirect methods. The establishment of day industrial schools would provide for a certain class of children, not now touched. More stringent laws against habitual drunkards who neglect their families might provide for another class, by their admission to Poor-law schools; penalties and payment might be enforced against the parent, or he might be shut up in an inebriates' workhouse or other institution. To give the School Board powers to have additional infant-schools, with arrangements by which the younger children could be cared for during the day, and the money earned by father and mother thus expended directly on their maintenance, would reach another class. If the School Management Committees of the Board were a reality in all poor localities, their influence might do something. There is a real evil. The children are over-instructed and often underfed. The Educational Department can remedy the former by itself; the latter is no business of any educational authority. The social reformer should fix his attention on its difficulties, study, and solve them."—*British Medical Journal.*

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

For country houses, hotels and isolated residences in general, the best and most successful plan for the disposal of sewage is to collect it in a closed cistern and discharge it periodically through a flushing tank, into a series of small tile-pipes laid to a gentle grade from 8 to 12 inches below the surface. By extending the tiles over a sufficient area and allowing from 40 to 70 feet of tile for each person, a complete absorption of the sewage takes place by the action of the atmosphere and roots.

Petroleum in the Caucasus.—According to the British Vice-consul at Batum, Mr. Peacock, the oil-region of the Caucasus covers some 1,200 square miles. The most productive locality is the Apcheron peninsula, where the wells far exceed those of Pennsylvania. The total production has risen from 500,000 barrels in 1873 to about 4,000,000 barrels in 1881. The export from Baku has increased at the rate of 1,250,000 barrels in two years. According to the daily papers, a pipe-line is projected from the oil-region to Baku; and the American producer must rely on the quality of his product, rather than on its cheapness, for the future of our export trade.

The Weight and Growth of Infants.—The proportion between the age, weight, and height of infants has a bearing on successful nursery management of much the same import as that observed all through the period of childhood. The rapid rate of increase in the earlier months of infancy, and the variations which are then observable, make a separate study of this period essential. A vigorous healthy child should double its birth-weight in the first four or five months, and treble it at a year old. This rate of growth is not uniform, nor does it proceed at any steadily-decreasing ratio, but is subject to the variations shown on the diagrams farther on. The loss of weight marked in the first few days is constant; it is not owing to the want of nutriment or to the kind of supply given. The most appropriate ingesta are those which aid the clearance of waste material from the bowels and kidneys. If the infant wets the napkin freely it is receiving all it needs in the way of fluids, and at this time the proportion of solid matter to be passed is increased tenfold. A week later, with six times as much urine voided, only half this active waste is evidenced. The natural period of most rapid growth comes to a pause about the fifth month in healthy children, when the teeth are forming, and a further demand on the nutritive supply is made. Care has to be taken lest this pause be unduly prolonged, and a downward tendency advance to positive illness. We see also the first increase of weight checked as growth increases, so that some processes may be less active while a new direction is given to healthy development. Still, for infants under three years of age, weight is the best criterion of progress.—*Dr. Squire in "Healthy Homes.*

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

By D. A. Sargent.

(*From the "North American Review."*)

FIFTH AND LAST PAPER.

When boys come from the fitting school equally prepared in body and in mind for the duties before them, it will then do to talk of making our higher institutions of learning training schools for the intellect alone. But, while they are filled with students whose minds have been forced and "crammed" in order to build a reputation for masters and tutors; while class after class enters college well grounded in the classics and totally ignorant of the first principles of physiology and hygiene; while hundreds break down yearly for the want of physical stamina; while precarious health is the rule and a sound and vigorous constitution the exception, it is little less than criminal folly to talk of such a course. The body must be cared for, and when and how are the only questions open for discussion. If our preparatory schools were more generally patronised, and more liberally furnished with appropriate appliances, we should say that here was the field for physical training. But under present conditions the work, if done at all, must be done in college; and in college the first essential is to put this work on an equal footing with every other. If attendance at chapel or recitations is required, then attendance at the gymnasium should be insisted upon. Make this one of the stated requirements, and the student will look upon it as upon any other college duty. The great majority of students are disposed to do what is thought to be best for them, and the complaint arises—when complaint is heard—from a failure on the part of the faculty or the managing boards to make provision for regular advancement in the exercises which they have introduced.

To keep a class drilling from two to four years with wooden dumb-bells and Indian clubs only is as great a mistake in a scheme of physical education as it would be to confine the same class exclusively to the study of geometry, with a view to giving them a thorough mental training. Such exercises are elementary in their nature, and in a prescribed course they should precede all others. But, after they have done their work, which is to supple the joints, rather than to develop the muscles, the student should be allowed to go higher. A change is necessary, not only to meet the demands of increasing strength, but to keep up an interest. The pupil must have something to look forward to—something to struggle with and to master. In no place can a system of physical culture be carried out better than in a well-disciplined college. Before the freshman class begins gymnasium work every member should be examined physically, as he had previously been examined mentally before entering college. Then, instead of putting all in one class, and adapting the prescribed exercises to the capacity of the weakest, grade the class according to the needs of its individual members, and arrange the exercises to correspond. Those with flat chests and consumptive tendencies should be put in one squad; those with weak backs and slender waists in another; those with strong bodies, but undeveloped limbs, in a third; and so on, until the whole class has been divided into squads composed of men of like capacity, and requiring similar treatment. The duration of this special training would, of course, depend upon the condition of each student, and should be left to the discretion of the instructor. After personal deficiencies have thus been corrected, the students should be transferred to the regular gymnastic class, and the members of this class should be led on from one piece of apparatus to another, until all the popular appliances of the gymnasium have been brought into service. By changing the course of instruction from term to term, and allowing some freedom of choice, a lively interest could be maintained which would add greatly to the benefit of the exercise. At the close of the first year the class should be examined in their work, and be grouped the next year according to their proficiency. The books of the director should be open to inspection, and the vital statistics of each man recorded at the beginning of the year could be compared with those taken at the close. By such a system the physical condition of every student in college could be readily ascertained, and the value of regular and progressive exercise be put to the test. The course that we have described is essentially practicable—is, indeed, substantially that pursued at Harvard University—and we believe it to be the only one by which the gymnasium can be made to minister to the wants of all, and its exercises rendered educational.

As a rule, students take about the same rank in required gymnastics that they do in their regular studies. Whether this is due to a superior ability or to a better *morale* we will not attempt to say. But we can say that those who fail in their studies, for want of application or habits of attention, will be likely to fail in gymnastics for the same reason. Mental characteristics always manifest themselves in physical exercises. We mention this in order to dispel the idea so generally entertained, that, in the so-called physical exercises, brute strength always predominates. Brain and nerve-substance is behind every well-controlled muscular movement. Indeed, the two are so closely connected that it is hard to tell what is due to the mind and what to the body.

In the system which we propose, we do not leave out of consideration boating, base-ball, and other popular pastimes. But we would have them regarded as recreative exercises, and as such taken during the hours allotted to pleasure and relaxation. So far as they go, they afford the best kind of development; but, to those who pursue these sports vigorously and earnestly, gymnastics must come in as a corrective. They should be put through a course adapted to bring into action the muscles which their particular pastime has left unemployed. By such a method the gymnasium is made not only a school of physical training, but a school of moral discipline. The accomplishment of difficult feats may not in itself amount to much, but the required development, the habits of self-control, and the rapid and responsible exercise of judgment which is so frequently called for, are powers gained, and cannot fail to be of service to a man in any vocation in life.

In looking over the whole field of physical sports and games we can find nothing so well adapted to the complete muscular education of youth as the exercise of a well-appointed, well-conducted gymnasium. Every variety of apparatus can be introduced, all the movements can be arranged in a progressive series, and the entire system can be adjusted to meet and remedy the physical defects of each individual student. The times are ripe for action on this subject. Public thought is turning to it as never before. People are asking with growing earnestness, if nothing can

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

help them to resist the destructive wear and waste of American business life. When insanity and the hundred forms of nervous diseases are on the increase, and when thousands of our educated young men are falling out in the battle of life for the want of strength and vigour, there is room for anxious questioning about our methods of physical training. Help must come from some source. And the suggestions which we have briefly offered in the present article we believe will secure the approval, because they will appeal to the reason, of intelligent thinkers.

Girls' Playgrounds.—There is one most unaccountable want in very many girls' schools in our cities. If boys need play, fresh air, games, muscular development, I have no hesitation in saying that girls need them all to the extent applicable to their constitution and strength still more. For boys will have them to some extent. If you don't give a boy a playground he will play on the street, which is better than no play. Now the exigency of public opinion will not allow our young ladies to amuse themselves on the streets; and if not, how are they to get the fresh air and muscular exercise that are absolutely necessary for their health and proper development?—*Dr. Clouston.*

A Queer Story.—Dr. de la Pommerais, says the Paris *Figaro*, was executed in June, 1864, for a murder of the Palmer type. On the night before his execution he was visited by Surgeon Velpeau, who, after a few preliminary remarks, informed him that he came in the interests of science, and that he hoped for Dr. de la Pommerais's co-operation. "You know," he said, "that one of the most interesting questions of physiology is as to whether any ray of memory, reflection, or real sensibility survives in the brain of a man after the fall of the head." At this point the condemned man looked somewhat startled; but professional instincts at once resumed their sway, and the two physicians calmly discussed and arranged the details of an experiment for the next morning. "When the knife falls," said Velpeau, "I shall be standing at your side, and your head will at once pass from the executioner's hands into mine. I will then cry distinctly into your ear: 'Couty de la Pommerais, can you at this moment thrice lower the lid of your right eye, while the left remains open?'" The next day, when the great surgeon reached the condemned cell, he found the doomed man practising the sign agreed upon. A few minutes later, the guillotine had done its work, the head was in Velpeau's hands, and the question put. Familiar as he was with the most shocking and ghastly scenes, he was almost frozen with terror as he saw the right lid fall, while the other eye looked fixedly at him. "Again!" he cried frantically. The lids moved, but they did not part. It was all over.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Wiesen as a Health-Resort in early Phthisis (Consumption). With Directions for Clothing, Diet, and Exercise in the Swiss Alps during winter. By A. T. Tucker Wise, M.D., L.R.C.P., M.R.C.S., &c. (London: Baillière, Tindall, & Cox.). 1883.

Although nearly half a century has passed since an English medical man (Dr. Bodingson) first recommended the trial of cold pure air for cases of chest complaint, it is only within late years that the advantages of such treatment have been fully recognised by the profession, and yielded to by those who suffer from the above delicacy. The number of such persons who now seek restoration to health in the high altitude of the Alps, for instance, is increasing every year, and there is little doubt that many patients derive more benefit from the bracing atmosphere of such places than they would do from the mild and relaxing climates, which at one time were all but universally insisted upon for consumptive subjects. It follows, then, that as this system becomes more popular, the greater amount of information we can receive regarding these health-resorts in high altitudes the better. To all who are interested in the matter, we can heartily recommend the above little book by Dr. Wise, as containing much useful information and many practical hints to those who think of spending the winter in the pure, keen air of the Engadine.

Dr. Wise introduces us to the subject in hand by pointing out the beneficial influence which bright, clear, cold, and a still atmosphere are known to have on the bodies and spirits of English people accustomed to a climate which is, to say the least, unreliable, and which, for at least nine months of the year, rings the changes on fogs, cold winds, and rains, with an occasional bright day between! To any one removing from such a climate to the bracing region which is here recommended, the change is most exhilarating, and at first almost intoxicating—so strong and fresh and sweet is the air which he breathes into his unaccustomed lungs.

Those who are unacquainted with high altitudes in winter—says Dr. Wise—may perhaps be inclined to judge the sensations at a high, cold region from an English standard of cold; thinking possibly that twenty degrees of frost signifies twenty degrees of chilliness, and that any temperature below freezing-point would be likely to cause discomfort to delicate persons. A brief explanation may tend to correct this view.

The explanation which follows, being somewhat technical, we omit; but Dr. Wise goes on to say, in language which all can understand:—

If, therefore, cold, motionless, dry air surrounds the body, heat is not abstracted nearly so readily as it would be by somewhat warmer air in motion. . . . In the high valleys of the Alps, although the thermometer may register some 15 or 20 degs. of frost, this low temperature is by no means disagreeable, as the calm air and intense solar heat enable many persons to sit in the open air and bask in the sun during the depth of winter.

And again:—

The exhilarating feeling produced by the consciousness of moving about amid snow and ice without taking cold or feeling pinched, is not to be despised, as contributing towards cure. The contrast of this with the life of a consumptive in England during winter, where every change of weather has to be guarded against, is so marked that the hope of recovery presents itself, and despondency is banished. There is every reason to suppose that under the many favourable circumstances presented by these climates, the treatment of suitable cases of consumption and affections of the chest

can be undertaken with greater confidence, and those measures which have of late years prolonged many valuable lives in England are certainly most likely to be efficient and successful, when supported by the curative effects of mountain air.

At the same time, Dr. Wise is anxious to prevent patients having too high an expectation of the benefits to be derived from a season spent in high altitudes; and in order to induce them to continue the necessary precautions in personal management, *after* having left these places, he quotes a statement made by Dr. Spengler, of Davos Platz, of which we venture to give a rough translation :—

"A physician residing at Davos has observed, during a practice extending over thirty years, that not only are the death-rates, and sanitary conditions generally, most favourable among the inhabitants of this valley, but that cases of pulmonary consumption in particular are completely unknown; or, at least, are extremely isolated. On the other hand, he has seen several natives of Davos, such as pastry-cooks, café-keepers, and the like, who, after having exchanged the life of their valley for that of some of the large European towns, have returned to Davos with all the symptoms of consumption. But after having breathed their native air for a while, their health has improved, and finally has become completely re-established. The news of these recoveries was quickly followed by the arrival of a number of invalids; and if the success which has crowned their sojourn at Davos has not been quite so rapid as in the case of those who were natives of the valley, it can hardly be said to be less happy or less complete."

It would appear from these observations (Dr. Wise remarks), that a prolonged existence in Davos does not carry with it an immunity from phthisis, even in presumably healthy persons with little or no hereditary predisposition to the disease. How much more, then, must "cured" patients be liable to a return of pulmonary symptoms. When are these likely to develop themselves? When does the expanded chest shrink again? These are questions which will be answered, no doubt, by increased experience of Alpine climates.

Dr. Wise, in his description of Wiesen as a health-resort during winter, presents to us a most fascinating picture. Situated nearly 5,000 ft. above the sea-level, sheltered by mountain ranges from all cold winds, and lying fair to the sun, this little Alpine village forms a pleasant resting-place within reach of much that is grand and picturesque. The pine-covered slopes, the deep-cut gorge, at the bottom of which flows the foaming Landwasser, and around and above all the snow-covered mountain-peaks, glistening against the bright blue sky, combine to make a picture which must charm the most exacting.

A variety of attractive walks can be had in the neighbourhood. Limiting enumeration to a few within a short distance, the descent to the Janisberg Brüche far exceeds all others in beauty. After repeated windings through a larch-wood, a view is obtained of an undulating ravine, densely overspread with dark green firs, stretching away to the Albula valley. The sound of the Landwasser becomes more distinct through the trees, and a few turns brings one abruptly on to the bridge. The bridge itself is built of pine, and has the sides and roof of the same material. It spans the chasm without any central support, and some rough engineering skill is evident in its construction. The spectator avails himself of a small hole, cut on either side, permitting a sight of the yawning abyss beneath. To project the head and peer down at the Landwasser is most fascinating, and well worth the half-hour spent in making the journey. After leaving the bridge, a few turns to the right will afford a fine front view of the Bäreuritt. In this direction the return trip can be prolonged through the pines towards Ziegelhütte, returning to Wiesen by the Landwasser road, occupying about one hour and a quarter.

Another walk which deserves special attention is to the Grosser Wasserfall. Passing through the village of Wiesen, distant about 200 yards from the hotels, and hidden from view by its position, the road makes several turns, and crossing one or two mountain torrents reaches an open pasture. Traversing this, and entering the forest, the waterfall is discovered in a secluded glade, affording a pretty glimpse at the peak of the Zinzenhorn.

Other excursions might be named which could be undertaken on foot or by sleigh. In the western division of the village are two hotels, each of which can accommodate from thirty to forty persons. Up to the present time mostly summer guests have frequented the place, but arrangements are now made to receive those whose health compels them to reside at a high altitude during the winter season. The proprietors furnish good cuisines, and the quality of the food compares very favourably with that at Davos, while the cost of living is less.

An important item in the advantages of a health-resort is, undoubtedly, good drinking-water. The supply of the Wiesen hotels is both excellent and wholesome. Coming from the high snowy range of the Sandhübel, and passing through the rocky soil beneath, the springs are led through pine-tree tubes to a tank on the hill, and thence by iron pipes to the hotels.

The water itself is without odour or flavour, and has a bright, sparkling appearance from the carbonic acid taken up in the interstices of the rocky soil, through which the springs percolate. Although deprived of its oxygen in winter, by freezing when falling as snow, it becomes sufficiently aërated in its course from the springs to the tank.

Dr. Wise gives some very useful advice and directions with respect to the clothes which should be worn in these high altitudes during winter, so as to be conducive to health as well as comfort. In the very first place, he advises ladies who seek restoration to health from lung disease to give up wearing corsets altogether. This advice will, no doubt, be unpalatable to some who practise the uncomfortable and pernicious mode of encasing themselves in a species of stiff armour, in spite of the many warnings held out to them for years by all medical men who understand the danger they incur. But we may hope that no ladies who desire to gain much benefit from residing in the high altitudes of the Alps will be foolish enough to handicap so heavily their chances of recovery by neglecting to follow Dr. Wise's advice in this matter. The slightest consideration will suffice to show how important a part is played by the very muscles which are fettered and confined in their movements by a tight-fitting corset; while the free play of the lungs in breathing is limited to short labouring gasps, which are totally insufficient to replenish with air the respiratory organs.

The substitutes for corsets should be a thick flannel waistcoat or jersey. Flannel should also be worn next the skin, over the trunk and extremities. Chamois leather may be substituted when over-sensitiveness of the skin renders the use of flannel unbearable; generally, however, a fine texture can be procured which is not too irritating. A good stock should be taken, as frequent changes are beneficial. The coverings for the feet and legs require attention. In all cases woollen socks or stockings are indispensable. Flannel pants should be made long enough for socks to be drawn over them. By enveloping the whole body in flannel, the patient is spared the necessity of loading the exterior with thick weighty dresses or overcoats, which fatigue the wearer and confine the act of respiration.

A few words of advice about the prevention of chilblains will prove useful to many who suffer from those "minor but troublesome ailments," even without leaving home. In the first place, walking exercise immediately after breakfast is prescribed, in order to get the feet warm for the day. Also the wearing of thick woollen socks and cloth gaiters, and boots which are neither too thick nor inelastic.

Ordinary stout skating boots with broad toes, low heels, and plenty of room inside them, which may be filled up with a cork sole, are suitable for ladies as well as gentlemen; they should be well greased every day, and always changed immediately after a long walk.

As a prophylactic against chilblains, bathing the feet in salt and water, avoiding tight boots, and changing the socks whenever the feet are damp from perspiration, &c., will carry many through the winter of a cold climate, who might otherwise suffer much inconvenience and pain.

Goloshes are not recommended for constant use, though they are warm and useful to wear on a short journey. Grey is given as the best colour for all clothes, as "a light colour does not absorb nor radiate heat so much as black." Another very sensible remark made by Dr. Wise is that waistcoats should be lined with flannel throughout, as, by the present mode of garments, a man may have four times the number of layers across his chest that he has on his back. Fur tippets for ladies are not recommended as being healthy, as they cause the shoulders to become overheated, and therefore liable to catch cold on being uncovered. Dr. Wise has appended a short list of articles which may be found serviceable for these climates.

In a chapter on the diet which is required in the Swiss Alps, Dr. Wise reminds us of the necessity which exists in cold climates of consuming animal fats, in which, as a rule, the cuisines of Swiss hotels are very much wanting.

It is essential to the health and well-being of individuals that a proper proportion of nitrogenous and non-nitrogenous food should be consumed. The latter consists chiefly of starch, fats, sugar, saline substances, and water, which in the ordinary way with meats form the mixed dietary most suitable for man, as the structure of his teeth and past experiences indicate . . . . As a general rule, few delicate persons would be capable of effectually digesting the quantity of bread, pastry, milk, and root vegetables, &c., which would be requisite to constitute with the meat eaten a fair combination of nitrogenous and non-nitrogenous matter; and as there is a marked absence of palatable fat at these places, a little consideration of the means for balancing the needful combination will conduce to the recovery of health, and avert many ill-effects arising from perverted nutrition—as dyspepsia, troubled sleep, a loaded tongue, &c.

Cod-liver oil is also highly recommended; and to those who find this objectionable the advice is given to eat butter at every meal, and cream is also to be indulged in. These rules of diet can be modified to each case as common sense and experience dictate. This may also be said of the rules laid down for exercise, meals, sleep, &c. As Dr. Wise remarks, much will depend on the state of health and capability for exertion. One rule, however, is given to all, viz., keep as much in the open air as possible. This chapter on personal hygienic management is written chiefly for those who are not so ill as to require constant medical supervision. Beginning the day at 6.30 or 7 a.m. by drinking warm new milk, and rising in time to partake of breakfast at 8.30 or 9 a.m., the patient should go out for a walk, returning about 11 a.m. for another glass of warm milk. Care must be taken never to permit breathlessness nor fatigue, nor in any case should the body be allowed to cool quickly if perspiring. In the afternoon skating, coasting, walking, or sleighing may be indulged in; also "tobogganning" for those who are vigorous enough. Lawn-tennis is also played, but is suited only for the strongest. The dinner-hour varies in different hotels; and the evening is spent in various ways—amateur theatricals, concerts, readings, &c.

Dr. Wise gives it as his opinion that most people should not return home direct from the Alps, when the end of winter seems to be approaching. There are many places within reach, either in Italy—as Sorrento, Lugano, or Como—or on the shores of Lac Léman, where it would be well to wait before setting out for England.

The rest of Dr. Wise's interesting little book is taken up with a weather journal of Wiesen, in which the notes taken by different observers are compared with the climates of St. Moritz and Davos; and after studying the different meteorological tables appended, one would certainly feel inclined to give the preference to Wiesen as a health-resort during the winter season.

Perfect Daylight.—Use Chappuis' Reflectors, 69, Fleet-street.—[Advt.]

The Missouri State Board of Health has prepared a circular containing quarantine regulations and directions to be pursued by county courts in dealing with small-pox and other contagious diseases. It recommends the placarding of all houses where contagious diseases exist, the notification of schools within the vicinity of cases of small-pox, the general vaccination of school-children and adults, and the removal of patients to an hospital provided specially for the purpose, or, when such cannot be done, the strict isolation of the house or houses in which the disease exists.

Application for the Removal of Scars.—

℞—Borax	℥ iss.	
Salicylic acid.....	gr. xij.	
Glycerine	℥ iij.	
Rose water	℥ vj.	M.

Lint soaked in this solution and allowed to remain some little time each day, will frequently mitigate the visible results of burns, small-pox scars, ringworms, &c.

Lungs and Air.—In the course of 24 hours about 2,000 gallons of air pass through our lungs; and we have seen that the air thus expelled from them is unfit to support life—nay, even that it is highly poisonous. It not only contains carbonic acid gas, but some other organic matters that are much more deleterious. It has been ascertained by direct experiment that air containing respiratory impurity, measured by an addition of only two parts of carbonic acid per 10,000 of air, is the limit of such impurity that can be allowed to be present if we are to remain in health. But in order to attain this standard, no less than 3,000 cubic feet, or 10,000 gallons of air per hour must be available, and well mixed with the air breathed. In other words, by our breathing we spoil 120 times more of air than we can use in our lungs, and instead of only 2,000 gallons, we need 240,000 gallons of air every day of our lives.

One of the first really practical writers on the subject of hygiene was the well-known Ludovico Cornaro, a noble Venetian, who, after a youth of intemperance and excess, reformed his ways, and kept so strict a watch over his diet and habits, that he prolonged his life to the age of a hundred years, dying in April, 1566. Various writers followed Cornaro—few of them of much note except the famous Jerome Cardan, one of the most learned physicians of the Renaissance, but somewhat whimsical in his hygienic views. Of the other masters of the period, Thomas Philologus, of Ravenna, is worthy of mention, on account of his strong protest against intramural interment, thus anticipating by some three centuries the happily fruitful labours of our distinguished countryman, Edwin Chadwick. The next writer of eminence was the celebrated Sanctorius, a Professor of Padua. He wrote a work on health, entitled "Medicina Statica," and he also began the era of exact observation by his experiments with the weighing chair, by which he endeavoured to show the weight of the insensible perspiration. The aphorisms in his book are couched in quaint and even fantastic language, but many of them are sound when stripped of the vagueness and mannerism of the time.

Sanitary Appliances, Etc.

BUCHAN'S PATENT INDUCED CURRENT FIXED VENTILATORS.

If some one could invent a really self-acting exhaust ventilator that would act equally well in all weathers and situations, and for all purposes for which ventilation is required, he would merit the title of a benefactor to humanity. No one has done so as yet, nor, we fear, is likely to do it until an equally clever inventor is able to make a sailing-vessel go as well as a steamer independent of or against both wind and tide.

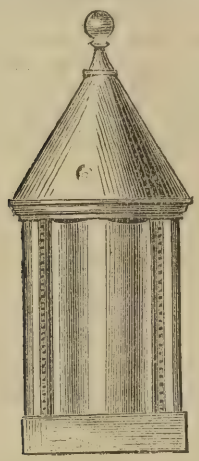

Fig. 1.

Fig. 2.

Notwithstanding their general disability to compete in many ways with steamers, sailing-vessels in practice are found to be useful, and equally so as regards wind-acting ventilators, although, of course, they are not to be depended upon to work so well always when wished as mechanically driven ones. Yet a good wind-acting ventilator when properly fitted up like a good sailing-vessel is found to be a most useful and valuable appliance—the wind being

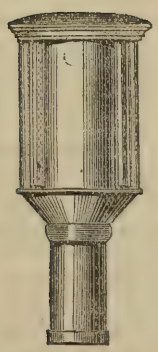

Fig. 3.

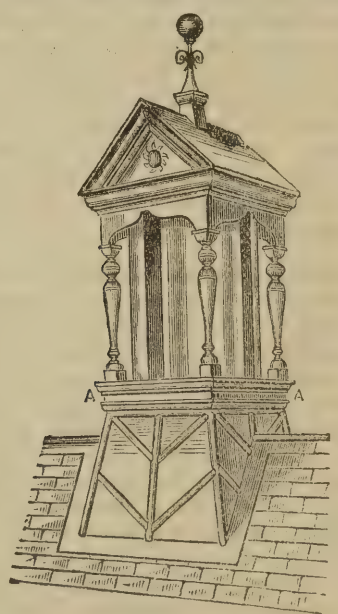

Fig. 4.

a much cheaper motive-power than coals, &c. Amongst all the ventilators in use which have been practically experimented with and tested, the Induced Current Fixed Ventilator, patented by Mr. W. P. Buchan, of Glasgow, holds a foremost place. In a very elaborate series of comparative tests with the principal cowls and ventilators in the market, conducted by Mr. S. S. Hellyer, of London, and described and recorded in the second edition of his book "Dulce Domum," published by B. T. Batsford, London, the author says:—"Taking all the tests into consideration, the palm of victory must be given to Mr. Buchan's."

From its construction the Induced Current Ventilator has not only a strong exhaust power when acted upon by the passing wind, but in cases where there is an inclination to down-draught in the ventilating pipe, upon which it is fixed, this tendency is especially combated, and it is no unusual circumstance for the Induced Current Ventilator to be sucking up when others in the same position would be allowing down draught.

These ventilators are all "Fixed," so are not liable to get out of order. They are made in a variety of styles and to suit various purposes.

Three styles are here illustrated for use in buildings. The No. 1 (Fig. 2), in its smaller sizes, is used for ventilating soil-pipes, drains and sewers, &c. The No. 2 (Fig. 1) is largely used for halls, schools, churches, hospitals, &c.; or where the extra cost is allowed, No. 7 or some of the other ornamental styles are used in place of No. 2. The No. 7 style (Fig. 4) is just being applied in the new Hospital for Incurables at Morningfield.

The flat-topped ventilator (Fig. 3) is used for ships, yachts, &c. It has been adopted lately by the engineers of the Clan Line of Steamers for the last four additions to their fleet, and reported upon most favourably by Captain Rule, of the *Clan Macarthur*, for their working during both the outward and homeward voyages to and from Calcutta.

The Ventilators themselves, and all information regarding them, may be had from the Patentee, Mr. W. P. Buchan, Sanitary Engineer, 21, Renfrew-street, Glasgow.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

PARENTS' DUTIES AND HEALTH.

Sir,—The following statement of facts may not be without interest to your readers, and I trust that their publication may do some good as a warning to parents and others not to neglect *first symptoms* of illness in their children.

I live in the most healthy situation in an extremely healthy suburb of a large and healthy town. Not only is the death-rate of the locality remarkably low, but the Medical Officer of Health, who has known it for more than fourteen years, informs me that he has never known any disease become epidemic in the place. At present, however, measles are rife, and became so under the following circumstances:—There is a school here, with about fifty boys in attendance, two of my own among them. The parents of a boy, A., allowed him to go to school one day while very poorly. Next day measles developed itself unmistakably in A. while he was at school, and he was subsequently kept at home. *The mischief, however, had been done;* the poison-seeds had been sown, and, after several days' incubation, fifteen boys, or *a third of the school*, were ill of measles. This happened just before the "breaking up" of the school for the Christmas holidays, and the annual festivities in connection therewith were seriously interfered with. Moreover, measles was thus carried into fifteen houses, and in many cases, my own amongst the number, the boys' sisters and brothers caught it. Thus, then, through indifference (if nothing worse) on the part of the parents of A., the Christmas family gatherings of fifteen families were entirely stopped, and numbers of little people, who had been long looking forward to what is, *par excellence*, the children's festival, were deprived of all their expected enjoyments, and obliged to eat a Christmas dinner (?) of "slops."—I am, Sir, yours faithfully,

An Angry Father.

December 29, 1883.

A TEACHER'S JUST GRIEVANCE.

Sir,—During the last few days, I have been made painfully aware of the need that exists for your invaluable paper. If the laws of health are so little understood among the upper middle classes, the aggregate of ignorance must be vast indeed. In the hope that a brief mention of a few facts may serve a useful purpose, I trouble you with this note. I am the head-master of a school of fifty boys, situated in a healthy country place near a large and healthy town. The boys are the sons of merchants and professional men. One of these boys, living in a village at some distance from the school, has infected nearly a third of his school-fellows with measles, simply through neglect on the part of his parents of ordinary precautions. The boy had been ailing some days. He was not under my immediate supervision, and I was not made aware of it; but in spite of this he was allowed to attend school, until the symptoms of measles were too evident to be mistaken. Of course, the boy's parents erred in ignorance; and I feel certain that this is not a solitary instance of the bad consequence resulting from a neglect of first symptoms. For some days after the boy had ceased to attend school no other cases occurred; but, by the end of the second week, nine boys were attacked, and the number subsequently increased to fifteen—the whole number, I believe, of boys in the school who had not previously had the complaint. As a consequence, our Christmas concert was interfered with, some Cambridge Local Examination candidates were compelled to forego their examination, the "Christmas joys" of a number of young people were spoiled—for I have left out of my enumeration sisters and other members of the families who were attacked. Thirty parents have been compelled to spend a somewhat anxious Christmastide, and not a little trouble has been occasioned to An Aggrieved Schoolmaster.

CHILDREN'S DRESS.

Sir,—In No. 36, page 165, of your journal, the following words occur, which, I think, require some explanation on the part of the authoress, Miss Ada S. Ballin:—"After that time (till the child begins to walk, say, two years old) the boot should be *made* exactly to fit the foot, and of a soft, yielding kid, so that there shall be no pressure on any part, while *there is no room allowed for the foot to become deformed by spreading.*"

Perhaps Miss Ballin would explain her ideas respecting the usefulness of a boot in preventing deformity of the foot, and say, also, if she thinks that the feet of all children who do not wear shoes such as she describes, or who do not wear shoes at all, are deformed. I should also be glad to learn any ideas she entertains respecting the necessity for applying close-fitting articles of attire to prevent deformity. Does she think that a close-fitting corset is necessary to prevent a young lady's figure from becoming deformed? Her reply would, I have no doubt, be most edifying to all your readers, and I hope she will favour us with an answer to the foregoing.—I am, yours faithfully, H. Maxwell.

Liverpool, Dec. 31, 1883.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.

We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.

GENERAL.

Vis.—Thanks for your letter and pamphlet enclosed. We intend to resume the subject shortly; but, as you can readily understand, it does not suit our purpose to make any topic *de trop.* We agree with you, that the quack-subject deserves the attention of our legislators. This has all along been our contention, and the medical journals have been reiterating a similar assertion for years back. The new Medical Bill, however, will likely contain provisions making the quackery now rampant an offence against the law. At present, quacks can distribute their filthy literature broadcast (in London at least) without hindrance.

Cuisine.—We shall endeavour to act up to your hint. Thanks for your note.

Glasgow.—Not at present.

B. Auld.—The ingredients are given in page 82.

J. Corkran.—About 20 per cent.; but less may be used.

Ogilvie.—See reply to "Vis," above.

Elgin.—Dr. Wilson's Lectures on Anatomy and Physiology will be delivered in due course in England. The "Combe" Lectures have not, as yet, been given in England.

Austin H.—"Pronation" means the turning of the forearm so that the palm is turned downwards or backwards. In Supination the palm is turned upwards or forwards.

Ella.—It contains lead. Dangerous to use.

B. C. G.—The *Rodents* or gnawing animals.

SANITARY.

Ablewhite.—We advise you to give either "Sanitas" or "Chloralum" a trial. In the case you mention the smell of Carbolic Acid would most likely prove highly nauseous and offensive (though in no sense injurious) to the patient. "Sanitas" can be had in powder or fluid.

Joseph Anderson.—We shall publish articles on "Earth Closets" shortly; and we also expect to print particulars of a new invention which may suit your views.

Independent.—You have no power under the Act.

B. A.—The Terebene Soap is valuable as an ordinary soap, and may be used with advantage in baths given to patients recovering from infectious diseases. Calvert's "Carbolic Soap," and Wright's "Coal Tar Soap" are also excellent.

Mechanic.—You must have the flooring removed and examined. The smell of which you complain seems to proceed from rotting wood. From what you say, we think you will find the waste water escapes, causes wood-decay, and thus raises the odour you mention.

Olga.—See reply to "B. A." above. For toilet purposes "Pear's" excels all. It is a fine soap, devoid of all colouring and extraneous matter.

Quirk.—You will find what you require at 23 and 24, Charing-cross, London, W.C.

Intending Purchaser.—1. The "Edinburgh Sewer Trap" should suit you (28, Upper Priory, Birmingham). 2. Maignen's "Filtre Rapide" is that regarding which you inquire. Address, Great Tower-street, London, E.C.

W. Dixon.—Wilson's "Handbook of Sanitary Science" (Churchill), Parke's "Hygiene" (Churchill), Corfield's "Health" (Kegan, Paul, & Co.), Corfield's "Laws of Health" (Longmans).

MEDICAL.

Hope.—We should advise you to take a teaspoonful of Fellows' "Syrup of the Hypophosphites" thrice daily before food, in a wineglassful of water. (By no means think of taking any other tonic; that you name we have no confidence in.) In addition to the tonic, we should advise you very strongly to make a stay at the sea-side, or take a sea voyage. The south of England would suit you best. If you suffer from "chronic catarrh" (which is doubtful), you suffer also from aphonia (or loss of voice). As this to you is a serious matter, we shall be glad, if desired, to send you (on receipt of stamped addressed envelope) the name of a physician in Edinburgh who makes the throat a special study, and who will examine your throat and give you a reliable opinion. Before doing so, try the above tonic, and, above all, don't despair.

Co. Down.—We should advise you to give the tonic above prescribed to "Hope" a trial. Your diet should include more vegetables; and in place of the pills try "Æsculap" or "Friedrichshall Mineral Water" in the morning. Morson's "Pepsine" taken along with your food should also aid you. Glad to be of any further service. Take plenty of open-air exercise.

D. G.—The author of the pamphlet is a duly-qualified medical man. There is nothing new in his mode of treatment by inhalation; this mode is, in fact, practised daily by physicians. We think you may, if you feel disposed, give his system a trial. See our own recipes for inhalations given to "Mignon," Health, No. 35. Electricity is of no use in your case.

W. Martin.—The preparation you name may safely be used for darkening the hair. Use it with the oil. See to your general health. Attend also to your food; avoid vegetables for a time; and rest after eating especially. For the rheumatic pains rub in hot oil and use hot salt baths.

H. C. E.—In our opinion, your case is simply one for wise dietetic treatment. For a time let well-nigh all your food be light and nutritious. Take Brand's "Beef Essences," "Soups," &c., milk, light-boiled eggs, and avoid tea and coffee. Take a little good claret at dinner; no other stimulant; and a little Morson's "Pepsine" with food will also be advisable. For the sleeplessness, we should recommend a tepid bath taken before going to bed occasionally, and free exercise through the day. Let us hear how you are in a few days' time. Glad to be of further service.

A. W.—Glad our advice has so far relieved your indigestion. Continue to be careful in diet and you will outgrow your troubles. The perspiration in the feet is only a sign of a little lowness of tone. Bathe the feet in alum and water, and take for a few days in trial the tonic recommended to "Hope" above.

T. R. M.—The "lumps" you speak of are "wens." They will do you no harm; but, if you desire their removal, a surgeon can easily and (by means of ether applied to the skin as an anæsthetic) painlessly accomplish this. The surgeon you name will be fully able to advise you in every way.

SCALP.—You might try a lotion as follows:—Liquor subacetate of lead, one drachm; glycerine, three drachms; water, to make up six ounces. Label: "Poison; for outward use only." Let us hear how you are in a few days. See to your health, and send particulars of general condition. The skin-disease is probably a symptom of lowness of your system.

ALCHEMIST.—We shall make inquiry and reply in this column when we have obtained definitely the recipe for which you ask.

H. E. H.—Can only be obtained from any druggist who manufactures it on a large scale. You could distil water at home by means of a simple apparatus, which any optician or philosophical instrument maker would provide.

AN ANXIOUS MOTHER.—We have no confidence in the remedy you name. It is not in repute in this country. See our advice to "Marjory" in No. 39 HEALTH. The condition to which you refer is rather a symptom than a disease. Glad to be of any further service if advice above indicated is not found to be sufficient. We suspect in the case you name there is some special condition requiring medical examination. Try *Fer Bravais*, 10 drops thrice daily.

CLEVELAND.—1. Probably you are constitutionally thin. Try cod-liver oil; a dessertspoonful thrice daily after meals. Limit exercise, and rest. 2. Apply to the manager of any of the steamship companies. At Hull there are several to whom you might make application. 3. Clothe warmly, and attend to general health. You should wear a flannel belt. The air is bracing; and, if you are in good health, should suit you.

SENEX.—Yours is a case for careful attention to the general health. We should advise a short trial of the tonic prescribed to "Hope" in present number. Rub the legs with warm oil at night.

DRAFTSMAN.—No evidence of abnormal "growth," such as you fear. Try the following:—Citrate of iron and quinine, a drachm and a half; carbonate of ammonia, two drachms; tincture of orange peel, two ounces; water to make up six ounces. A tablespoonful thrice daily.

SWEETNESS.—There could be no harm in trying Pulvermacher's belts, which are genuine appliances, and likely to do you good. You seem to be troubled with a nervous affection (or affections), which have produced general derangement of your system. We can only repeat here, that you must exercise care in food taking (try Morson's "Pepsine" with your food); and if your symptoms continue, we should advise a consultation with a London physician, whose address we will be glad to send you if desired.

FROU FROU.—We cannot recommend any plan except judicious dumb-bell and trapeze exercises.

EARNEST.—Take the tonic recommended to "Hope" in present number. Have plenty of out-door exercise, and, above all, don't be morbid. If you can bear cold-water sponging each morning, give this a trial.

J. T.—Are you inclined to be gouty in any way? The great toe is often affected in this disease. Try rest and roomy boots. If the pain continues, describe your health more fully, and we will advise.

OPERÆ PRETIUM EST.—Give up vegetables for a time, and try Morson's "Pepsine" along with your food. Rest after meals, above all.

ESPOIR ET DÉSESPOIR.—You have evidently run the gauntlet of medicine and medicines. You appear to us to be over-sensitive, and inclined to be morbid. You show no evidence of ill-health, and what you name is rather natural than otherwise, if not in excess. Take the tonic recommended to "Hope" in present number, and see also advice to "Earnest" above. Above all, be cheerful, and give up gloomy thoughts.

A VICTIM TO ASTHMA should continue to take the tonic he mentions for a time. It will do good in the direction he indicates. Glad to be of any further service, if required. The "Pepsine" should be taken along with meals, as directed. Morson's "Pepsine" is a reliable preparation.

W. C. GOULD.—We do not understand what you mean by "physical" acne. Ordinary "acne" is a disease in which certain ducts of the skin are plugged up by their secretion—forming the so-called "worms" in the face, or "blackheads." We should recommend you to steam the face at night, and to apply vigorous friction thereafter with a flesh-brush or hard towel; while you may also use the following lotion: Sulphur, three drachms; glycerine, four drachms; rectified spirits of wine, to make up four ounces. Rub in at night.

H. T. W.—Add Tidman's "Sea Salt," or Brills' Salt, to an ordinary bath, and have the water as hot as it can conveniently be borne. There is no cheap work on baths; but we intend shortly to have a series of papers on "Baths and Bathing" in HEALTH.

SILVER TRUMPET.—The cause is due usually to some error in diet. You should attend very carefully to your food, and see that your digestion is good. Avoid all stimulants, and take "Æsculap" mineral water or "Friedrichshall" as a mild aperient occasionally. If not better, write again.

HENRY HALEY.—Try the effect of rubbing in warm oil to the affected parts at night. Bathe the painful parts in hot salt water occasionally. In your living avoid stimulants (beer, &c.), and clothe warmly.

F. S.—1. Yes; your treatment was on the whole fair; but you would have done quite well without the mercury and with potass iodide. 2. We do not think the acne had anything whatever to do with the original affection. We do not believe in the connection between acne and the treatment you name. 3. No; port wine would not ordinarily be given in the case you name. All stimulants in such a case are, in our opinion, injurious, and create a craving (*vide* your own case) impossible to satisfy. 4. A purely nervous affection, due possibly to some peculiarity of your system as affected by alcohol. 5. The effect of coffee and tea is possibly in your case similar to that of alcohol—only, bear in mind, you are treating a body which, from your own showing, has had a surfeit of alcohol. 6. We do not think you suffer now from your original affection. Our earnest advice to you now is, to drop all stimulants; to attend to your warmth and nutrition; to take occasionally a little iodide of potass (two drachms to six ounces of Calumba infusion—a dessertspoonful thrice daily). The person you name is not a qualified medical man. His quack pamphlets are sufficient evidence of the nature of his calling.

SOLLA.—See paragraph on excessive perspiration in HEALTH Vol. I (see Index). In such a case as yours, the excessive perspiration is often a symptom of a little lowness of system. Try the effect of bathing the hands now and then in a saturated solution of boracic acid. A tonic (such as that prescribed to "Hope" in present number) taken for a day or two only may brace you up and cure you. If not better, write again.

X. Y. Z.—Your symptoms are those of general health-derangement. The more special matter to which you refer is an indication that probably you suffer from some slight internal affection. See and follow advice to "Marjory" in HEALTH, No. 39. If not improved by such simple treatment, we should advise a medical consultation, which, in cases like yours, is often absolutely necessary.

B. M.—You do not give a specific description of the skin affection; nor do you state how or when it appears, and how long it persists, or whether there is any eruption, &c. Kindly furnish these particulars.

ALPHA BETA.—1. Give up the medicine now, and endeavour so to regulate your life in every way—diet, exercise, &c.,—that you will not require further drugging. 2. For the sleeplessness trust most to open-air exercise; but if you should take anything try fifteen grains bromide of potass in a wineglassful of water on each alternate night for a week. 3. We believe the person you name is a duly qualified medical man. We know nothing of his treatment or reputation. 4. Trust to good health for return of brain-power.

JOHN SMITH.—Thanks for your good wishes. See advice for "acne," or "blackheads," given to "W. C. Gould" in present number of HEALTH.

EPIDERMIS.—Are your coats (or dresses) easy enough under the armpits? See that no chafing is allowed to exist; bathe the skin with a solution of alum and water; thereafter use a little plain Vaseline as an application. Write again if not better.

AN ANXIOUS FATHER.—1. For the skin affection we should recommend you to take mild aperients ("Æsculap," or "Friedrichshall Water"), to avoid stimulants and heating food, and to dust the affected parts with a powder consisting of three parts starch and one part oxide of zinc. You might also paint the pustule before it breaks with collodion. If not better, write again. 2. For

[*Continued on page* 240.

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Is it purity of conscience, or your one-and-seven sherry?'

I refrained, however; and he presently explained. 'I have been revelling this morning,' he said, 'in a new pair of spectacles:' which struck me as almost as odd as revelling in one-and-seven sherry, till he explained that for years he had been troubled by ill-suited spectacles, and that 'our friend Mr. Browning' had at a first trial provided him with a perfect pair.

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The other affection you name we should recommend cooling lotions and a suspensory bandage. Take also the tonic recommended to "Hope" in present number.

A. SPENCER.—1. Take the tonic recommended to "Hope" in present number of HEALTH for a time as an experiment. It may possibly relieve all your symptoms, and you certainly seem to require a tonic. 2. See reviews of recent books on "Cookery" in HEALTH. 3. The chilliness is due to weak health. When you get up to par the cold will leave you. 4. Sleep with the feet on a pillow, and bathe legs and feet occasionally in hot salt and water. Glad to hear from you again as to effect of treatment.

WILLIAM.—Take a little "Æsculap" mineral water in the mornings occasionally, and avoid all pills and other purgatives. Let your food be light and nutritious for a time: soups, fish, milk, light boiled eggs (no beer or coffee, and mostly fluid foods), and take a little "Pepsine" with the food. Rest after meals especially.

PSORIASIS.—You suffer from an obstinate skin-disease, the nature of which is to take a lengthy time to cure. Why should you fear its being known? That thought is a highly foolish one. If you send us a stamped addressed envelope, we think we can put you in the way of obtaining a sound medical opinion, under circumstances which will suit your case. We know nothing of the author of the pamphlet you enclose.

J. K.—The affection you name is not uncommon, and depends on a variety of circumstances. As a primary recommendation we should recommend you to try the effect of mildly aperient mineral waters, avoid stimulating food, and employ, as a local application, oxide of zinc ointment. Let us hear how you are shortly, as the affection is somewhat intractable, and we may be able to recommend something suitable if required.

STYX.—Don't be despondent. First of all, you should know that the occurrence you name (unless occurring too frequently) is often a criterion of robust health. Only quacks allege the contrary. Take the tonic recommended to "Hope" in present number of HEALTH. Use cold sponging in the morning, sleep on a hard mattress, and avoid fluids late at night. For constipation use "Æsculap" water. You appear to lay at the door of your other troubles the special weakness of which you complain. You will recover perfectly by attention to above, provided always you are cheerful.

MISFORTUNE will find in the early monthly parts of HEALTH papers on the "Hair," which he should peruse carefully. If not relieved thereby he should write again.

A DEVONIAN.—See advice to "Styx" above.

ARCTURUS.—See and follow advice to "Styx" above, and don't despond. Glad to be of further service, if necessary.

T. TURNER.—From your account of your case we imagine you are cured. What you now require is a course of careful tonic medicine. Try *Fer Bravais* (fifteen drops thrice daily in water), and let us hear how you are in fourteen days or so.

G. HARRINGTON.—1. No fear of any such result as that you name. 2. Pay attention to your general health. 3. A hard mattress simply will suffice.

HEINRICH.—No medical man can possibly say that meat is bad for either young or old engaged in severe work. The contrary opinion, is that which is scientifically correct. You should have plenty of solid, rich food—meat, fish especially, eggs, milk, &c. If you underfeed when engaged in severe exertion, you will assuredly break down. Let your breakfast consist of milk, porridge (if it agrees with you), or cocoa and milk, and bread with light-boiled eggs or fish. For dinner have soup, a moderate allowance of meat and ordinary vegetables, or fish in place of meat on certain days, with milk-puddings, &c.; and, for tea, take milk and bread, or cocoa, in preference to tea itself.

ERNEST (Shrewsbury).—What do you call "very frequent?" See remarks to "Styx" above. If these do not answer your case, write again. Thanks for good wishes.

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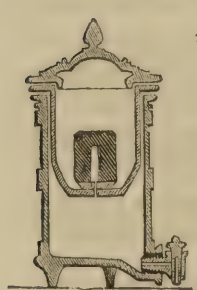

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 18, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

A correspondent, who has recently returned to England after an absence of many years, remarks that he has been surprised to find gas in almost universal use for heating purposes. He finds gas-stoves in general use, gas-fires in rooms, and gas in the kitchen as a means for cooking. We are asked whether or not the use of gas in houses to such an extent is injurious to health. Our correspondent adds that opinions vary very much on this point, and he is perfectly correct in saying that the question is an important one from a health-point of view. Its solution is, however, easy. Where gas is used, the safety of health simply depends on securing full, free, and perfect ventilation. The necessity for this precaution is highly apparent, when we think of the impurities which gas sends forth into the atmosphere; and when we reflect on the evil which is wrought to health when these impurities are inhaled. If we can be assured of the ventilation of houses in which gas is employed, there need be no hesitation in employing this medium for any domestic purpose. It is, however, doubtful if we have yet reached that stage of sanitary progress wherein such ventilation is possible. Even in our apartments, where gas forms the illuminating medium, there is often a decided lack of precautions in securing the free and perfect removal of the deleterious products of gas-combustion.

✣ ✣ ✣

In a letter to the *Pall Mall Gazette*, "C. M. D." writes regarding the drink of the poor. He propounds the question:—

> What shall be the drink of the poor in those vast areas of our large towns where pure water and good milk are just the most difficult things to procure, and where the public-house is the only present guarantee for a supply of fairly wholesome drink?

His subsequent remarks are interesting enough to be quoted in full:—

> In considering this question, together with the amount spent on drink, it should not be forgotten that all drink but water must be paid for, and that in the poorer districts of most large towns water is not only scarce, but at certain seasons of drought or frost it is either wholly cut off from millions of people, or highly dangerous in its character; and as drink of some description is as necessary as solid food, a large proportion of income must be spent either on coffee-house tea and coffee, aërated waters, or fermented liquors. The people know that many outbreaks of fever have been traced to cheap aërated waters or impure milk; they know equally well that good Burton beer, for instance, is made from the finest water, and has passed through processes which render it a perfect aseptic. The *Medical Times* of Oct. 20 describes beer as the "ideal drink" for the poor, "both economically and physiologically a drink combining so many useful qualities that nothing can be provided at the price that is at all likely to supersede it." In the medical report of the late outbreak of fever in North London it is pointed out that where beer-drinkers and milk-drinkers were of the same household the milk-drinkers suffered while the beer-drinkers all escaped. Under these circumstances it appears inevitable that the poor shall insist upon a supply of fermented liquor, and prefer to spend their money in that way; and, until good water and good milk are brought to every door, it must be a distinct advantage to the public health that houses shall be within reach where the poor can procure good fermented liquor in small quantities without incurring the expense and temptation that the possession of a large quantity at home would entail. The present object to be attained is, therefore, not the suppression of licences to sell small quantities, but to so regulate the conduct of the houses that the weak and ignorant shall not be tempted either to spend too much or to remain too long.

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There may be, and very likely is, truth in the foregoing remarks concerning the immunity of beer-drinkers from typhoid fever as compared with milk-consumers; but "C. M. D.'s" argument seems to us a highly dangerous one, and one founded, moreover, on slightly mistaken grounds withal. The necessity for beer cannot be admitted by any physiologist to begin with. The cost of beer as compared with milk is very great, and the nutritive qualities of beer will not bear comparison for a moment with those of Nature's own typical food. Again, to argue that any fermented liquor can be a substitute for good water and good milk may be permissible, if water and milk respectively were always tainted with impurities. The wiser course is that of showing merely that where water and milk are to be suspected of containing fever-poison, beer might then be taken as a beverage, and, possibly, as a means of avoiding disease. But, unfortunately, the further argument that the public-house is an ark of safety in such a contingency, is one that is likely to open the door only too readily to excess. We fail to follow "C. M. D." in his contention that because beer may be occasionally useful as he describes, this fact is to be used in support of the continuance of public-houses. We say this, while uncommitted to teetotallism; and our remedy for bad water and bad milk is a simpler one than that propounded by "C. M. D." When either is suspected of being impure, rigid attention to the perfect boiling of the liquid in question will be found an effectual preventive of any diseased action. When we remark also that the beer sold in public-houses is, in a large proportion of cases, anything but "good Burton beer," we have said enough to show that "C. M. D.'s" proposition is more ingenious than salutary in its nature.

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Some highly curious statements have recently been made regarding the culture or strengthening of the voice by chemical means. Dr. Carter Moffatt recently detailed in Glasgow his ideas and practice regarding this subject. He claims that the peroxide of hydrogen possesses the power of improving the quality and tone of the voice; his contention being that as this compound is a prominent constituent of the air and dew of Italy, "the home of song," its effects may possibly be witnessed in the high development of the vocal organs of that country. Of course, the considerations of race and heredity require to be taken into account in such an argument; but it is possible that atmospheric conditions, which possess such marked effect on human health, and especially on the lungs,

may play an important part in voice culture. Dr. Moffatt showed in his own person, and in others, the effects of inhaling a compound supposed to represent Italian air, and demonstrated that by this means the tones of the voice could be modified and changed in a remarkable degree. The outcome of such a theory of voice-culture may involve some startling departures from the ordinary ways and means of vocal education. It will certainly be a startling innovation if, in the near future, we may find the chemical laboratory becoming an adjunct to the class-room of the professor of singing and elocution. It is needless to add that the musical profession and public at large will wait with interest for further information regarding Dr. Moffatt's theory and practice. We shall have something to say regarding peroxide of hydrogen in our next issue.

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At the Academy of Medicine of Paris M. Sandras gave very distinct utterance to his views regarding the treatment of chest-complaints by inhalation. He argued that to treat colds and allied troubles by giving drugs to be swallowed is, at the best, an unsatisfactory and roundabout method of treatment, seeing that any medicinal substance which passes into the stomach requires to pass into the circulation and to reach the lungs by means of the blood. Turpentine and tar, according to M. Sandras, are the best remedies for application by inhalations. By means of an inhaler his treatment is readily carried out. This instrument consists of a bottle or jar, through the cork of which pass two tubes. One of these is the inhaling tube, and to this an india-rubber mouth-piece is attached, the lower end of this first tube being made to rise clear of the liquid in the flask. The second tube opens into the air above, but its lower end dips into the fluid below. The jar is then half-filled with a fluid consisting of a mixture of chloroform ether and turpentine; or, as another inhalation, 100 grammes (a gramme nearly equals 16 grains) of turpentine may be poured on 20 grammes of Norwegian tar. Either mixture is to be inhaled three times a day for five minutes at a time, and at the rate of from 15 to 20 inspirations a minute. It is said that this simple treatment is of immense value in the cure of coughs and their attendant troubles.

The International Health Exhibition.—In response to the appeal of the Lord Mayor, based on the suggestion of his Royal Highness the Prince of Wales, the following Livery Companies have subscribed towards the expenses of the forthcoming International Health Exhibition at South Kensington, namely, the Grocers' Company, £1,000, with a guarantee of £2,000; the Clothworkers', £200, and a guarantee of £300; the Fishmongers', £200, and a guarantee of £400; the Goldsmiths', £200; the Salters', £200, and a guarantee of £200; the Wheelwrights' Company, £100, and a guarantee of £1,200; the Dyers' Company, £105; the Joiners', £105, and a guarantee of £210; the Merchant Taylors', £105; the Saddlers', £105, and a guarantee of £210; the Skinners', £105, and a guarantee of £105; the Spectacle Makers', £100; the Coachmakers', £31. 10s. and £63; and the Horners', £25. The authorities of the Exhibition have been, it is understood, retarding their announcement of the formation of the general committee, in the hope of including the appointed representatives of the Guilds, but it is hoped that within a short time the remaining companies will have had an opportunity of meeting and coming to a decision as to their donations before the lists are finally closed. The Corporation, it may be added, have subscribed £5,000, and guaranteed £10,000, and their donation has already been paid over to the authorities.

Original Essays

"Life is not to live, but to be well."—*Martial.*

RECENT IMPROVEMENTS IN MEDICAL ELECTRICAL APPLIANCES.

In the present rapid march of electrical discovery and invention, when every year adds some valuable instrument to the list of means for generating and applying electricity to unnumbered ends, it is interesting to note that medical electricity is not being left to struggle hopelessly in the rear. In recent numbers of Health one of our contributors, Mr. Lant Carpenter, has given a valuable series of papers, pointing out, amongst other information, the worthlessness, from a physical point of view, of many "appliances." But negative commandments alone, constitute only a portion of dogmatic morality, and in addition to a warning notice board it is useful occasionally to plant a finger-post to mark a permissible path. We have had brought to our notice some new forms of apparatus intended for medical use, which promises a fresh departure, and we have illustrated them for the benefit of our readers. We called

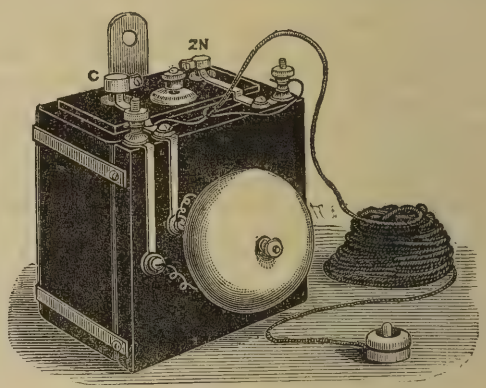

Fig. 1.—Call Bell and Battery.

attention some time back to a combined sealed battery and call-bell of novel form intended for invalids (see Fig. 1.) which is manufactured by the British Insulite Company, and it is to the enterprise of this same company that we are indebted for these new medical batteries.

Hitherto it has been found a great inconvenience that no form of medical battery can be sent about with its exciting fluid charged and ready for use. The small Leclanché cells generally used are only stopped with pitch, and are filled by surgical instrument makers, who fit them up in elaborate cases.

They can only with great precautions be sent to patients in the country, for whom electric treatment is prescribed. In addition to the direct galvanic currents, continuous or rendered intermittent, it is common to use what is called a Faradic current, in which a rapid series of short currents is given by means of an induction or intensity coil. To work it, however, requires a battery, and the one in common use is the "Bichromate" battery. This, however, rapidly exhausts in use, and needs refreshing by a dose of dilute sulphuric acid and bichromate of potash. If the zinc plates of this battery are left in, they rapidly corrode.

Most medical practitioners and private persons are too busy to take trouble with batteries, cleaning and recharging them; and the usual experience is, that after once or twice using a newly-purchased and, perhaps, expensive coil, it declines to perform on the next occasion, and the user rele-

gates it to the list of those things which act very well in the shop, but will not act when you get them home.

A fundamental requirement is, therefore, a battery-cell which is sent out ready charged, and which needs no messing with chemicals or filling up with water to make it act, but which is always clean and instantly available. This we have in the Insulite Sealed Cell, illustrated in Fig. 2.

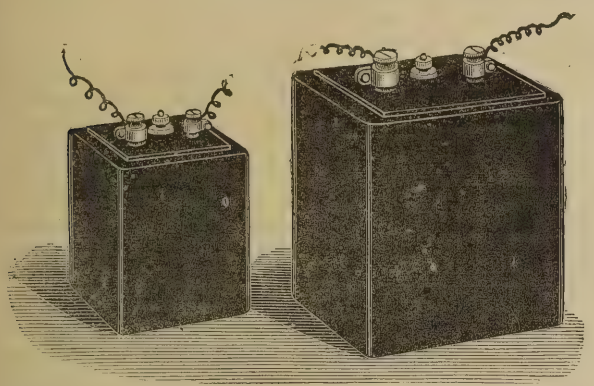

Fig. 2. Insulite Sealed Cells, for constant medical currents.

It is a small box or cell of insulite, having a zinc and carbon rod protruding through the lid, and terminated in nickel-plated screws. A small tin cap is also seen, which, when screwed down, hermetically closes the cell, but which, when unscrewed, affords escape to generated gases. The chemicals with which it is charged are harmless and non-corrosive. The height of this little cell is $4\frac{1}{2}$ in.; its breadth, $2\frac{1}{2}$ in.; and its width, 2 in. Sets of these are joined up in series, and arranged in boxes of 6, 12, or any number. The great claim of these cells to notice is that, besides being very constant and affording a smooth, gentle current, they are sent away ready for use. If, then, a practitioner prescribes galvanic treatment, the exact number of cells required can be packed in a simple box and sent off charged. In many cases such treatment

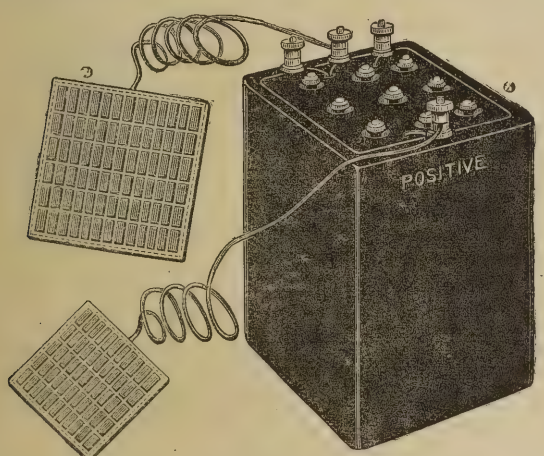

Fig. 3.—Set of Nine Tubular Medical Cells for constant current.

is out of the question from the expense of existing apparatus. What the patient requires is the means of getting the electric current at any hour of the day or night without trouble, and he does not generally desire to pay for an elaborate mahogany box, covered with an eruption of brass binding screws and handles. But, although these cells are admirable for stationary use, they are a little too large to be easily portable in large numbers. Hence the inventor of these cells has devised a still smaller and simpler arrangement, which is called the Tubular Medical Battery. It consists of a tube one inch in diameter and five inches long. Nine of these cells are packed in a small ebonised case, and these sets of nines can be made up in boxes of 18, 27, 36, &c., cells. These cells cannot slop or spill. Fig. 3 represents one set. This is perhaps the most compact and lightest medical battery yet introduced. Our electrical readers will understand what is meant by the statement that each cell of this kind has an electromotive force of a little more than one volt.

Hence a set of 54 of these cells, which constitutes a most powerful medical battery, occupies a space only of 12 inches long, 7 inches high, 8 inches wide, and a set of 18 can easily be carried in the hand.

There is one other battery on a still smaller scale which is a marvel of compactness. It is a pocket battery consisting of four cells, in a case about the size of a pocket-book (see Fig. 4). This little battery can, with the proper

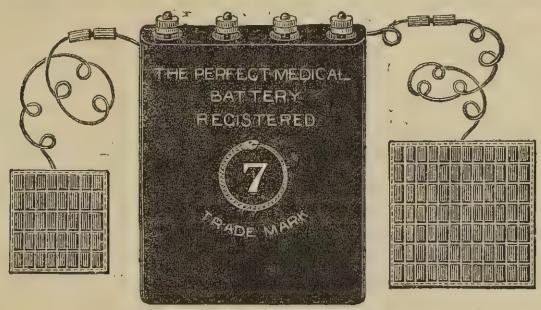

Fig. 4.—Pocket Medical Battery of Four Cells. Constant Current.

electrodes, pass a most unmistakable current of electricity through the body. It can ring a bell, and, if attached to a small voltameter, it decomposes water freely. If passed through a resistance to prevent too great flow, a battery of this description will decompose water slowly for eight weeks without cessation, thus proving its great constancy.

(To be concluded.)

STORIES OF SCIENCE AND CRIME.

FOURTH PAPER.—IDENTIFICATION BY LIGHTNING-FLASHES, &c.—CASES OF FASTING.

Some curious and highly-interesting questions have occasionally been propounded in our courts of law regarding the limits of human sight, and the possibility of identifying persons or things in a very short space of time; as, for example, where identification of a criminal has been alleged to have taken place during a lightning-flash, or by aid of the flash of a pistol-shot. It has been estimated that, as regards the distance at which a person of ordinary height can be seen on level ground, about three and a half miles—assuming the day to be clear—from the limits of ordinary healthy vision. By clear moonlight, a person well known to the observer, can be recognised when standing sixteen to seventeen yards off, but recognition, even at that distance, may not be accurate, and much depends, of course, on the clearness of the light.

The possibility of identifying a person during a flash of lightning has frequently formed a moot point in criminal cases. A lady voyaging from India saw by aid of a lightning-flash, and was able to identify, a man who had entered her cabin in the night, and was engaged in robbing her trunk. Dr. Tidy tells us that in many cases, though not in all, a flash of lightning will enable a person to see and identify even minute objects. On one occasion

he saw a black hair-pin on the ground during a lightning-flash, and was able to pick it up by the light of the next flash. At the Thames Police Court in August, 1876, a sergeant of police swore that he saw three lads abuse an old man, and that he recognised them during a brilliant flash of lightning which had occurred during the assault. On this evidence, the police-magistrate committed the prisoners for trial.

The flash of firearms has often been relied upon as affording means and opportunity of identification. Several instructive cases have been placed on record wherein such evidence has been accounted of worthy kind, and where experiment has proved the possibility of recognition being effected. A French case illustrates this point. A gentleman, the Sieur Labbé, accompanied by a Madame Beaujean, was riding along a high road in May, 1808. The moon had not risen. A gun was fired through a hedge, the shot striking the servant of the Sieur Labbé in the hand. The persons swore they recognised the would-be assassin by the flash of the discharge, and the prisoner, on this testimony, was sentenced to death. He appealed, according to French usage, to the Court of Cassation, and the matter was referred to a committee of experts, by way of deciding the possibility of such recognition as was alleged to have taken place. The decision of the experts was against such probability. They maintained that the light was so transitory and weak, that it was scarcely possible to see the shape of a head, while the face could not be recognised. The sentenee of death was reversed in accordance with this view; but subsequent experiments, arising out of another case of like nature to that of the Sieur Labbé's servant, showed that, as is now held by medical jurists, it is possible, under favourable circumstances, to identify a person by the light of a pistol or gun-flash. In England a gamekeeper, in 1862, identified his assailant by such means, the prisoner in this case being convicted. In 1799 the well-known case of Paris and Fonblanque excited attention on account of the evidence of a policeman that the highwayman rode a horse of dark-brown colour, with remarkable head and shoulders, while the rider was said to have worn a rough, brown overcoat. These features he had been able to see clearly by aid of the flash of his pistol.

Passing now to deal with a different topic, we come to the interesting question of starvation, and to the possibilities of life being preserved for long periods in the absence of the ordinary diet. The cases of alleged starvation which attract public notice in a high degree are those of "fasting girls" and like subjects. A suspicion of fraud naturally attaches to such cases, for the plain reason that, as we know the body is always wasting as the result of life and work, so must it be renewed through the food demanded by life's laws. One of the fasting cases which attracted much attention and excited no little excitement was that of Sarah Jacob, the "Welsh Fasting Girl." This girl was born in 1857, and in 1867, after an illness, abstinence from food for longer or shorter intervals was said to have been practised. From October, 1867, till her death, which occurred December 17th, 1869, it was alleged she took no food whatever. One feature of this case at once made it assume a suspicious look in the eyes of all sensible persons, lay or medical—namely, that during her entire "fast" she continued plump, and even gained flesh! A strict watch was kept on the girl, however, during the last week. The cognisance of her case began at 3 p.m., Dec. 9th, her death taking place at 3 p.m. on the 17th. For seven days, therefore, this unfortunate girl was really starved; and the result showed clearly enough that when means were taken to prevent fraud, the natural end of things was duly arrived at. The parents, who must, of course, have been cognisant of the danger to which they were exposing their child by consenting to the scientific watching of her case, and through not supplying her with food and ending the deception, were justly sentenced at the Carmarthen Summer Assizes of 1870, the father to twelve months' and the mother to six months' imprisonment.

An equally famous case, which occurred towards the beginning of the century, was that of Ann Moore, of Tutbury, in Staffordshire. A report was spread about that this woman, a person of middle age, lived without food; and a watch being set for three weeks, the result was believed to prove this statement to be true. She was extremely thin, and it was alleged that her dislike to food arose from her having washed the clothes of a person suffering from some form of ulceration. Naturally, the fame of the Tutbury wonder spread abroad, and Ann Moore's house became a kind of show-place. She received numerous donations, and was able to invest a considerable sum of money in consequence of the receipts derived from her visitors. In 1813, however, another watch was held; this time the committee consisting of educated persons, two of whom were in the room day and night. She was weighed daily, with the significant result that weight was found to have been lost each day. When the ninth day arrived, Dr. Fox found the patient in a state of collapse. He informed her that she would surely die if she did not take food; when she consented to sign a written confession, detailing her imposture, and admitting that she had occasionally taken nourishment for the last six years. The means she had employed in the deception of the first watching committee were ingenious enough. When her daughter washed her face she used towels soaked in milk, gravy, and other fluids; and when the daughter kissed the mother, each kiss was made the means of conveying sugar into the mouth of the impostor.

Soil-pipes extended above the roof should be left entirely open, with no return bend or cowl; a wire basket may be used where sticks or leaves might get in. The diameter of the part above the roof should be increased, especially the smaller waste-pipes, as the friction of air is comparatively much greater in them.

For the drain-pipes inside the house no material should be allowed that cannot give a water and air-tight joint. Outside the house the danger from leaky pipes is not so great, and vitrified pipes are generally good enough in the latter case. Inside of the house the large pipes should be of iron and the small ones of lead.

Population of Japan.—The last census (January, 1883) gives a total population of 36,700,118 souls, nearly equally divided between the sexes, the males being about one per cent. in excess. Kioto, the imperial city, contains 709,000, and Tokio, the capital, 1,064,000 inhabitants in round numbers.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

THE DECLINE OF COFFEE-DRINKING.

A large audience recently assembled at the Parkes Museum, to hear a lecture by Dr. G. V. Poore, Professor of Forensic Medicine in University College, on "Coffee and Tea." Sir Henry Thompson was in the chair. The lecturer, after expressing his belief that stimulants, both alcoholic and alkaloidal, had their uses, proceeded to contrast coffee and tea. Both, he observed, contained the same alkaloid, which had been called thein or caffein, according to its source of origin, and the effects produced by coffee and tea were almost identical. The cup of coffee, provided it were genuine, contained more alkaloid than the cup of tea, and owing to the absence of tannin the action of coffee was more rapid than that of tea. The specific gravity of a cup of tea was about 1003, that of coffee 1009, and of *café au lait* sweetened 1035. Tea was more of a pure beverage than coffee, and hence it was possible to use it as a mere luxury, as it demanded scarcely any digestive effort from the stomach, and did not "cloy" the palate. The danger of excessive tea-drinking lay mainly in the large amount of astringent matter, which was a potent cause of dyspepsia among women of the sempstress class, who consumed enormous quantities of common tea, which they not unfrequently boiled. When a stimulant was required by the body, the lecturer recommended a strong cup of coffee; if it were desired to wean the drunkard from his spirits, he thought that a real stimulant ought to be provided in their place, and not the sickly, bitter, unwholesome compounds which were allowed to be called coffee in this country. In order to make good coffee, the coffee-berry ought to be fresh roasted and ground. There ought to be no difficulty in getting fresh roasted coffee in London, and the lecturer stated his belief that there was an opening in this direction for enterprising tradesmen. There was no difficulty whatever in roasting coffee, and it ought to be part of the daily routine of every well-regulated house. The next step in the making of good coffee was to use enough coffee—1 oz. of coffee to a pint of water was barely enough, but 1½ oz., or 2 ozs. to a pint made first-rate coffee. The elaborate coffee-machines might be convenient, but provided the coffee were pure they were by no means necessary. If the coffee required for breakfast were put into a common earthenware jug over-night, and cold water poured upon it, it might be heated to boiling point in the morning by being stood in a saucepan of water over the fire. In this way any violent ebullition was avoided, the aroma was preserved, and the maximum extract was obtained from the coffee. The grounds, if the coffee were pure, occasioned no inconvenience, but if starchy pultaceous rubbish were used instead of genuine coffee, then elaborate coffee-filters became necessary. Chicory and the allied bodies, which were largely used as adulterants for coffee, were in no way substitutes for coffee, since they contained no alkaloid and had no stimulating properties. Out of 90 samples of ground coffee purchased in London shops only five were found to be genuine, so that those who purchased ground coffee were likely to be defrauded. The coffee-mixture gave an infusion of much higher specific gravity—1020-1023—than genuine coffee, and tended to derange the stomach and cause dyspepsia. The colour of coffee-infusion was no indication of its strength, and many of the black coffees owed their colour to caramel. The consumption of coffee in this country was steadily declining, a fact which was, he thought, largely due to the mistaken policy of the Government, who had placed the chicory and dandelion on a level with the aromatic coffee-berry. Coffee ought to be protected from adulteration, and he thought the temperance-party would be doing good work if they seriously took the matter up, and tried to protect the poor man from unscrupulous tradesmen who adulterated his coffee with all kinds of vegetable materials. Several gentlemen, who spoke from practical experience, confirmed the opinion expressed by Dr. Poore as to the proper way of making coffee. It appeared also from statements made that the greater part of the finest coffee grown was not only sold in England, but purchased by English tradesmen, so that there was no reason on that score why coffee in England should not be better than on the Continent or in the East.

SHIP SURGEONS.

In connection with Dr. Stone's recent article on "Ship Surgeons," in Health No. 37, the following letters addressed by Dr. Irwin to the *British Medical Journal* will be perused with interest :—

From a recently-published Parliamentary Report may be learned the following facts. No less than 140 medical officers, approved by the emigration officer at the port of clearance, were entrusted, on different voyages, with the sole "medical charge" of 108 steamships, which, during the six months ending June 30, 1882, carried emigrants from Great Britain to the United States and Canada. Of these gentlemen, eight possessed no qualification which would entitle them to practise in the United Kingdom; while of 132 remaining, 35 held but a single diploma—29 as surgeon alone, three as physician alone, and three as apothecary alone. Forty-six are reported as being 25 years of age or under, and 19 as being 23 years of age or under. Of the latter, 11 possessed but a single qualification. Of these 132 medical officers, *but 24 possessing any qualifications as a physician and surgeon had reached their thirtieth year.* Such facts need no comment. Certainly they go far to prove—there being nothing exceptional during the period named—that these officers "are appointed without due regard to age, qualification, or experience;" and that "comparatively few medical officers in every way suitable can be found in the mercantile marine medical service."

In a second letter, Dr. Irwin says :—From a recently-published Parliamentary Report may be ascertained the following facts :—During the six months ending June 30, 1882, 108 steamships (of which 104 were British) carried emigrants from Great Britain to the United States and Canada. These vessels were upon different voyages under the *full* "medical charge" of no less than 141 different

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

medical officers — showing that 33 changes took place within that period. Of these 141 gentlemen, 8 possessed no qualification which would entitle them to practise in the United Kingdom; and 35 others held but one diploma; 29 as surgeon only, 3 as physician only, and 3 as apothecary only. Forty-six are reported as being but 25 years of age or under, and 19 as being but 23 years of age or under. Of the latter, 11 held but one qualification. Sixty-five would have been ineligible, through lack of the minimum professional qualification, for the most junior medical appointment in the Royal naval, military, poor-law, asylum, or prison services; and of the entire 141 medical officers thus entrusted with the care of so many thousand valuable lives, under circumstances of unequalled difficulty, *only* 27, *possessing any qualification as a physician and surgeon, had reached their* 30*th year.*

These facts need no comment. Certainly there could be no stronger justification of my repeated complaint that "medical officers, in the Atlantic emigration services, are appointed without due regard to age, professional qualification, experience, &c.," or of your own statement, that "Comparatively few medical officers, in every way suitable, can be found in the mercantile marine services."

Indian Courtship.—Mrs. H. S. Baird recites a bit of her own observation respecting Indian courtship half a century ago in Wisconsin. When a youth falls in love, he places himself a little way from the maiden's wigwam, wearing one blue and one red legging. He then plays in a minor strain an air upon the flute, pib-pi-gwan. If he is permitted to proceed, he knows that there are no objections to his addressing the loved one. If the parents have objections to him, he is informed that he is too noisy, &c. In the latter case he discontinues his serenades; in the former, the flute-playing gives place to visits, the father saluting and saying, "Come in friend; there is room for you;" upon which all the family give a sort of hitch-up, to make room for one more around the fire. The young man seats himself by the door and next to the daughter; as the eldest son and daughter always sit nearest the door, on each side of it. The lover then produces a few small pine-sticks, one of which he lights at the fire, and hands to the maiden. If she takes it, he is accepted; if she does not, but lets him hold it until it goes out, he is rejected. When the time arrives for them to be united, the parents of the young man bring valuable presents, such as furs, while the parents of the bride bring ornamental work. These are distributed among the friends. The bride is dressed by her sister-in-law, and conducted to her place in the wigwam to await alone the coming of her husband. In other cases, when father-right prevails, she goes to his home. A man can have as many wives as may be required to dress his game and carry it home.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

Acid-proof Cement.—A cement which resists chlorine gas and vapours of acid is prepared by mixing the residues of the distillation of glycerin (which are sold in the market in form of a thick liquid) with dry, sifted clay to a plastic mass. About three parts of clay are required for one part of residue. Thus prepared, the cement is very resisting, and does not even lose its plastic properties, since the glycerin contained in it prevents its drying up at the temperatures usually existing in the chlorine or acid apparatus. This cement cannot be used where it will be exposed to atmospheric influences, since it will absorb moisture from the air.

Economical Soap.—The properties of soap and of silicate of soda possess great analogy. The combinations of weak acids possess a slightly alkaline reaction, their solutions being capable of forming an emulsion with fatty substances. These properties in common have led to the manufacture of cheap soaps, containing a large proportion of silicate of soda or soluble glass. Two processes may be employed: (1) the addition of a concentrated solution of silicate of soda to fatty or resinous soap; and (2) the saponification of fatty or resinous substances by alkaloids in the presence of silicate of soda. By either method a soap is obtained, suitable for all the uses to which ordinary soap has hitherto been applied, and at a much lower price, as silicate of soda is extremely cheap.

Impermeable Court Plaster without Silk.—Mix enough collodion with castor-oil to render it elastic when dry, the oil having profusely been rubbed with some zinc oxide. Into this mixture dip glass plates, and, after drying, redip and redry two or three times, or until a film of suitable thickness is obtained. Upon this paint the usual solution of isinglass to give it adhesiveness, and, after again drying, separate it from the glass.

Extract of Heliotrope.—Heliotropia, 1 part; Cologne-spirit, 100 parts. The odour may be improved by the addition of 0·1 of ambergris.

Tooth-powder.—(a) *Black:* Wood-charcoal, in fine powder, 28 parts; oyster-shell, 4 parts; orris-root, 4 parts; catechu, 2 parts; cinnamon, 2 parts; myrrh, 1 part. *Another:* Wood-charcoal, in fine powder, 4 parts; cinchona bark, in fine powder, 1 part; oil of cloves, q. s. (b) *Red:* Digest four to five drachms of powdered cochineal with a boiling-hot solution of 90 grains of pure carbonate of potassium in 2 fl. oz. of water; after several days, separate the liquid from the insoluble matter by pressing; triturate the liquid with a mixture of 16 oz. of powdered oyster-shells, 8 oz. of powdered cuttle-fish bone, 3 oz. of powdered orris-root, and 150 grains of burnt alum, and finally scent it with equal parts of oil of cloves and of bergamot. Or scent it with oil of peppermint, of which about 160 minims dissolved in 2 fl. oz. of alcohol may be incorporated with the powder. *Another:*—Cinchona, in fine powder, 4 parts; sandalwood, in fine powder, 8 parts; alum, in fine powder, 1 part; oil of cloves, oil of bergamot, equal parts, q. s. (c) *White:*—Cuttle-fish bone, in fine powder, 1 part; oyster-shell, in fine powder, 1 part; oil of peppermint or oil of sage, q. s.

Treatment of Burns.—A medical man writes:—Quite often I see formulas for the treatment of "burns." As I

have been burned all over my body, excepting the soles of my feet, upon which I stood while being burnt, so severely that twelve physicians said I could not live, you will see why I am so interested in such formulas. Please say from me that the free use of *soft soap* upon a fresh burn will remove the fire from the flesh *in less time than it takes to write these words.* If the burn be severe, after relief from the pain, use linseed oil, and then sift upon it wheat flour. When this is dried hard, repeat the oil and flour until a complete covering is obtained. Let this dry until it falls off, and a new skin will be formed without a scar. *This treatment leaves nothing more to be desired.*

To Administer Cod-Liver Oil, add to the dose thirty drops of sulphuric ether, and take both *cold.*

Insecticide for Plants.—Soft soap, 4; tobacco, 6; fusel oil, 5; Methylic alcohol, 20; water, sufficient to make 1,000 parts. Boil the tobacco with an equal weight of water for half an hour, replacing the water as it is dissipated on boiling. Then strain. Mix this liquid extract with the other ingredients, and add water enough to make 1,000 parts. Before use, the mixture is well shaken up, and then applied by means of a syringe throwing a fine spray to the affected plants. A rather dilute infusion of tobacco alone is likewise very effective for this purpose.

SEA-AIR IN TOWN.

By W. M. Williams, F.C.S.

If the theory propounded in the preceding note is correct, we may obtain one of the advantages, probably the chief advantage, of sea air in our homes in London, or any other great town, by simply filtering the air that enters the house.

This may be done by passing it through cotton-wool, which, as Tyndall has demonstrated, removes with remarkable efficiency all particles of suspended solid matter. If I am not mistaken, such filtering with cotton-wool is an element in one of the patented methods of ventilation that is commercially before the public.

There is, however, one objection to cotton-wool, viz., that it offers considerable resistance to the inflow, and in ordinary cases, where the difference of pressure which determines this is very small, this resistance may turn the scale and act as an effective obstruction.

Some years ago I made some experiments on the protection of plants from the mechanical deposits of town atmospheres, which deposition on their leaves is the chief cause of their stunted growth and untimely death (*see* "Science in Short Chapters," page 387). The material that I found the most effective is "scrim," or paper-hangers' canvas, a coarse, gauzy fabric, composed of fluffy fibres, the filaments of which fluff cross the interstices between the fibres, and act as remarkably efficient dust-stoppers. This material has the further advantage of being very cheap (it is retailed at about 3d. per square yard), and is so open as to be practically transparent, like wire gauze.

It may therefore be used by simply replacing a pane of glass in any window where its appearance is not seriously objectionable. In order to render it effective, it is necessary that the doors, window-sashes, and all other places of rival inlet be made to fit accurately, and that an outlet or upcast be created. This generally exists in ordinary chimneys.

The efficiency of such a strainer may be easily tested by examining its condition after it has been on duty during a week or so. In London it will be found richly begrimed on the outside, so much so, that in practically carrying out this method of filtration it is necessary that the scrim be strained on a movable frame, closely filling out the ventilating aperture, and that there should be a duplicate frame to replace that which must be removed from time to time for cleaning.

When my paper on this subject was finished, and about to be read at the Society of Arts, the late Mr. Le Neve Foster told me that something of the kind had been done at the Houses of Parliament, and he gave me an introduction to Mr. Prim, the engineer in charge of the ventilation arrangements. I found that, after many trials, he had settled down to use the same fabric as I had, and for nearly the same purpose, but that he has it wetted for cooling as well as filtering. I used it dry, and, after trying the Parliamentary system against my own, prefer it dry for ordinary use, *i.e.* where there is no special machinery, as in the Houses of Parliament, for forcing the air through the wetted canvas, which presents far more resistance than dry.

From the manner in which the light particles cling to the filaments, I conclude that a slight electrical excitation of the non-conducting fibre takes place by the friction of the air in passing through it. This may be proved by blowing through a piece of such material (well dried) with a pair of bellows, and then laying it on the plate of a gold leaf electrometer.

If I were living in the midst of London, Birmingham, Manchester, or any other large city, I would recklessly disfigure my premises by removing a pane of glass from the window of every room, or knocking a hole through the outer wall, and placing in the opening there created a frame of such scrim gauze, with a glass door for closing, or partially closing, it in extremely cold weather, and I believe that all the inmates would thereby escape *some* of the special ills that cockney flesh is heir to.—*Gentleman's Magazine.*

Mad Dogs.—The following notice has been issued by the Brown Institution. This disease occurs in dogs of all ages, and may appear at any season of the year. It is recognised by a change of demeanour of the dog, which becomes dejected, morose, inclined to roam, and anxious to hide itself. The animal gnaws at wood, stones, or any refuse which it sees, snaps at imaginary objects, and becomes unusually excited by strange or sudden noises. It rubs its throat with its paws, as if striving to get rid of some object lodged there; at the same time there is a more or less abundant flow of saliva from the mouth. The animal is, moreover, very readily excited, and barks with a peculiar harsh, strange cough. The dog will attack its master, or animals of any kind; but it is most easily roused to fury by the presence of other dogs. It is feared and shunned by healthy dogs, not only when it attacks them, but when the disease is in a very early stage. There is throughout the disease no dread of water. Before the tendency to bite shows itself the animal may be unusually affectionate to its master, licking his face and fawning upon him. In one form of the disease called "dumb madness," there is paralysis of the jaw, and therefore inability to bite. If a dog has shown any of the symptoms of madness mentioned above, or an unusual tendency to bite other animals, it should be at once loose-muzzled and securely chained up, but it is advisable that it should not be destroyed until it has been examined by some authority capable of determining whether the animal be rabid or not. Owners of dogs are warned of the danger they may incur by allowing their faces and hands (especially if scratched) to be licked by the animals, even if these show no sign of madness. All dog-bites should be immediately cleansed by suction and washing, and the wounds should be cauterised as soon as possible.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION AND HEALTH.

By B. H. Thwaite, F.C.S., A.M. Inst. C.E., &c.

FIFTH PAPER.—THE CLOSET ARRANGEMENTS OF THE HOUSE.

Although the general adoption of the water-closet is of a comparatively recent date, yet it has a very ancient origin. The Romans, along with their magnificent water supply arrangements, utilised this most convenient of all forms of closets. Yet, with all its advantages of convenience, the water-closet, if imperfectly arranged, may become a source of great danger to health.

The position of the water-closet should be such that if its traps or appliances for preventing the passage of the sewer-gas become deranged, there shall be no possibility of the sewer-gas entering the house; and this necessary condition involves the condemnation of all internal positions for water-closets.

The most desirable position for a water-closet is in a projecting wing or tower built from the ground or supported by corbels built in the outside walls of the house, and connected by a short passage to the main structure, and having double doors, one opening immediately into the water-closet proper, the other fixed in the external wall of the house, and opening on to the connecting passage, which should be well ventilated. In towns, however, this desirable arrangement can rarely be obtained, and the alternative position for the water-closet is against the external walls of the house, as far as possible away from all store-closets, larders, &c., and it should open into a passage, lobby, or ante-room well ventilated. Its walls should be lined with some non-absorbent substance, which can be easily washed. Parian cement is an admirable material for this purpose. The doors of the closets should have in their lower panels horizontal louvred openings to admit air, which, by the inclination of the louvred boards, will be directed upwards, and the upper panels of the door should be glazed with ground glass. To effect a proper circulation of the air in the closet, a ventilating opening should be made either in the ceiling or in the wall just under it, and connected to a ventilating pipe which should ascend to a height of a few inches above the roof of the water-closet, and be capped with a simple non-blow-down cowl.

Each of the inlet and outlet openings should have an area of at least 36 in. Besides the glazed panels which will admit rays of artificial light at night from the passage or lobby, a small window should also be fixed in the wall of the closet, just under the level of the ceiling. The constructional arrangement of the water-closet apparatus should be simple; all the mechanical parts should be strong, and be based on the simplest principles of mechanics. Those closets in which the mechanical parts, however ingenious, are delicate and complicated, soon get out of order and become useless. The water flushing handle should, however, be nicely balanced, in order that it can be set in motion with the greatest ease. The basin should be formed of incorrodable material, such as highly vitrified and glazed stoneware, earthenware, or china. The latter is certainly the best; and it should have sloping sides.

In order to prevent the adherence of matter to the sides of the closet-basin (a very common, unsightly, and highly insanitary defect), the flushing arrangements should be as complete as possible. Effective flushing of a water-closet does not depend upon the duration of time that water is allowed to run through it, but upon the force and volume with which the water is discharged. Two gallons of water from a cistern, fixed at least a distance of 10 ft. above the closet-basin (the water passing into the latter by means of a supply pipe having a $1\frac{1}{4}$ in. bore) is the minimum quantity allowable for effectual flushing.

It will be evident to the reader that the higher the water-closet cistern is above the basin, the greater the head or pressure of water, and the more effectual its flushing action. There should always be left in the basin of the water-closet, after the passage through it of the volume of water for flushing, a depth of at least $1\frac{1}{4}$ in. of water, to assist lubrication and promote condensation of the effete matters, watery vapour, &c.

The water-closet should, on no condition, be supplied with water from the cistern containing water for household purposes, but it should have its own independent cistern. Too much importance cannot be placed on this last condition.

In order to prevent waste of water during the flushing operation, several excellent and ingenious contrivances have been invented. Amongst them is Messrs. Tyler's very ingenious Waste-Not Regulator-Valve, which is fixed in close proximity with the seat of the water-closet, and can be attached to a clever foot-pedal arrangement (Terry's patent) by which the user can open the Waste-Not Regulator-Valve with the least pressure of his foot.

Lately, however, the vacuum or syphonic principle of the syphon flushing-tank for drains (and described in a former article) has been applied to water-closet cisterns. By this arrangement, in combination with a ball or float-cock, the water in the cistern is replenished immediately it becomes empty.

The cistern contains a sufficient quantity of water to produce effective flushing, and is simple, cheap, and far more reliable than any other description of waste-not water-closet cistern. It can be obtained of Messrs. Bolding & Sons, or of Messrs. Doulton, of London. So much and general condemnation has been bestowed upon what is known as the D and Hopper closet, that it is only necessary to repeat here that the former description of closet, which consists of a lead trap, resembling in its shape the letter D, and connected to the water-closet basin by a small lead pipe, is very imperfect, and certainly should not be used, as the D trap in a short time becomes filled up with waste matters. The Hopper closet, however, hardly deserves such a wide condemnation; indeed, it has been found to give satisfaction when fixed externally, and where there was a large quantity of water for flushing; but the untrapped Hopper closet should certainly not be used for any indoor position.

The water for flushing should be distributed uniformly over the basin by means of a circular perforated flushing pipe fixed around the rim of the basin. This arrangement is adopted in Messrs. Tyler & Son's closets.

In Bostel's well-known "Brighton" water-closets the water is well distributed by means of a flushing-rim forming part of the closet basin. It may be mentioned here that the flushing pipe from the water-closet system should

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for $1\frac{1}{2}$d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

be so arranged that in frosty weather it can be easily and slowly emptied to prevent its becoming frozen up. This precaution will save much annoyance.

All indoor water-closet basins should be directly connected to a trap, in order to intercept the sewer-gas which may be ascending the soil-pipe. The water-closet basin and indispensable trap should be formed in one compact piece.

The trap should have a ventilating-pipe, in order to prevent its becoming unsealed by syphonic action. This ventilating-pipe should pass through the outside wall of the house into the open air, and not be connected to the soil-pipe. A movable plug should also be placed in the closet-trap, in order that its condition, and that of the pipe connecting it to the soil-pipe, can be examined.

In Bostel's "Brighton" closet, however, the position of the trap is so arranged that its condition can be examined by simply removing the covering lid. This is an advantageous arrangement.

In order to prevent the basin from overflowing, an overflow-pipe, emptying into the open air should be fixed at its highest level. All closets should be strongly cased in, and be provided with covering lids. The risers should be made movable, for the purpose of facilitating examination.

The closets of the following makers are in every way satisfactory:—Bostel's Brighton water-closet, Tyler's, Jennings', Doulton's, and Todd's closets; the National closet and Woodward's wash-out closet, as well as those of Banner, Buchan, and Underhay. But any other form of closet properly possessing the important characteristics just enumerated, should be equally satisfactory.

The connection of the water-closet trap to the soil-pipe should be as short, straight, and direct as possible. The soil-pipe should certainly be placed outside the wall of the house; if placed internally it should be encased in another pipe of larger diameter, in order that if the soil-pipe becomes corroded through by the corrosive action of the adherent matter, the sewer gas shall not escape into the house. The soil-pipes should also be placed in positions easily accessible for examination, and it should be at least 3 inches in diameter, and be continued at this full diameter up to the level of the ridge of the roof, and be surmounted with a simple non-blow-down cowl. The soil-pipe may be constructed either of lead, earthenware, or iron. This latter material should, however, be properly protected from corrosive influences, either by having its internal surface enamelled or otherwise protected. Iron for soil-pipes has certainly the advantage of strength over earthenware or lead; its great disadvantage being its liability to oxidation, which, in the presence of the adherent slime, is rapid and destructive, and soon produces a stoppage in, or leakage of, the soil-pipe.

At its foot the soil-pipe should be connected to the drain by means of a ventilated disconnecting trap, in the manner described in a former article. During frosty weather it is advisable to occasionally flush the soil-pipe with salted warm water; this will prevent it from becoming frozen up, and obviate this common source of great inconvenience. If the precautions and conditions given in this article are properly adhered to, this unfortunate, though in this form convenient, necessity of civilised life would be perfectly free from those dangers to health which are only too often, and with truth, attributed to it.

The most searching test for water-closets and soil-pipes is the utilisation of the pungent odours of the oil of peppermint applied as follows: Two persons are required to conduct the test; one carrying the oil of peppermint, the other acting as a detective inside the house. The oil should be poured down the soil-pipe at its summit above the roof, or wherever it can be poured into the soil-pipe externally, and if there are any leakages the odours of peppermint will soon find their way through them and silently proclaim their locality. The person who carries the oil should not enter the house during the test, lest he may carry the odours of the oil of peppermint along with him and make the work of leakage detection very difficult.

PURE WATER is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the LONDON AND GENERAL WATER PURIFYING COMPANY, LIMITED, 157, Strand, London, W.C., who will return particulars post free.—[ADVT.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

THE ADULTERATION OF FOOD IN FRANCE.—The Director of the Paris Municipal Laboratory, M. Girard, under whose auspices much good and useful work is being performed in the way of exposing the multifarious forms of food-adulteration, reports that the skill and ingenuity displayed by fraudulent inventors would suffice to make their fortunes a dozen times over in any honest capacity. The chemical knowledge applied to the concoction of spurious foods and drinks is of a very high order, the latest thing being the manufacture of gooseberry jelly entirely from seaweed, there not being a particle of gooseberry in it. It is coloured with fuchsine or some similar material, and the flavour is given by a compound of five parts of acetic ether, four parts of tartaric acid, and one each of aldehyde and œnanthic acid. M. Girard gives also the composition of nine other chemical compounds for imitating the flavours of strawberry, pine-apple, melon, apple, pear, cherry, peach, apricot, and plum. Unfortunately, too, in the coarser and commoner forms of adulteration, quite as much activity is displayed. Flour is exposed to damp, so as to make it weigh heavier, the result being that the gluten is altered and rendered less fit for bread-making, and more liable to mould. Mineral products are often mixed with flour, such as lead, copper, zinc, sulphate of lime, and chalk. Of thirty-one specimens of flour examined at the laboratory only thirteen were found to be pure, a sample of which came from Rotterdam containing as much as 30 per cent. of plaster, while another held 30 per cent. of sulphate of barium.—*British Medical Journal.*

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INSECTS AS MEDICINE.—Mr. Colebrooke writes in *Land and Water* as follows:—With reference to your correspondent's letter on the use of insects in medicine, I would wish to quote some remarks by Sir Thos. Watson, the late celebrated physician:—"In the year 1760 a number of prisoners from the vanquished squadron of Thurot having been landed in the Isle of Man, Dr. Gillespie, who was practising there, found that many of the agues which came to prevail both among these prisoners and the inhabitants of the island obstinately resisted bark and such other remedies as he had recourse to. He was informed by an

MONEY SAVED.—Adopt CHAPPUIS' Daylight Reflectors, to supersede gas or lamp light during the day. They are universally used, from gentlemen's houses to workmen's shops or dwelling-places. (H.) Chappuis, patentee, 69, Fleet-street, London.—[ADVT.]

old French physician belonging to the squadron of the alleged efficacy of cobweb in certain forms of the disease. He therefore made trial of the cobweb, and found it answer admirably. He succeeded with it in more than sixty cases of different types in the Isle of Man, and he had further experience of its utility subsequently in Ayrshire. After this the same remedy was tested in the West Indies by Dr. Jackson, to whom Dr. Gillespie had recommended it. Dr. Jackson's observations were made in the hospital of the army depôt in the West Indies in 1801. Several cases of ague, in which bark and arsenic and other remedies had singly or alternately made either a very temporary impression or none at all, were selected for experiment. In four, two pills, containing each five grains of cobweb, were given at intervals of two hours, commencing six hours before the expected time of recurrence of the attack. The fit did not return. On subsequent trials it was found not only to arrest the course of agues, but to remove the various other symptoms connected with them. The web used was that of the black spider, so common in barns, stables, and cellars. Quinine in those days had not been discovered; but I can only say that, if I were so situated that I could get none, and were myself attacked with ague in this country, I would readily procure spiders' webs and swallow their pills. I have tried, but hitherto in vain, to get an analysis made of these webs. Scorpion oil was formerly used in medicine. I was not aware that the ladybird destroyed the *Aphis rosæ*, or rose louse; that it is the best friend to the hop grower by its destruction of the *Aphis humuli*, or hop fly, every one knows, and for that purpose it was so created by Almighty wisdom, certainly not for the cure of toothache or any other ache." P.S.—I may mention that spider's webs were much used formerly and externally in repressing hœmorrhage as a substitute for agaric. I have applied them when a boy to my own cut finger, and the flow of blood was immediately stanched.

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Safety in the House.—At a recent meeting of the National Health Society, a communication was received from Mr. George Shaw, Master of the Plumbers' Company, in response to a communication which had been addressed to him from the Society expressing the desire to co-operate with the Guild of Plumbers in promoting the systematic instruction, examination, and registration of plumbers. The Master of the Plumbers' Company intimates that the attention of the Guild is directed to this subject, and that methods of forwarding the desired object were under consideration, in which they would be glad of the co-operation of the National Health Society. In the previous year, the National Health Society had instituted a series of lectures to plumbers, which were attended by audiences so large that the course had to be repeated, and a subsequent examination was held, which included the testing of practical work done by plumbers. This was conducted by Mr. George Shaw and Mr. Ernest Turner. The result showed that while, on the one hand, plumbers were evidently very desirous of better instruction; on the other hand, their work was, in a great majority of instances, so defective, even among the picked men who appeared for examination, that only a small proportion of the prizes could be awarded, and very little of the work was of first-rate quality. Mr. Ernest Hart, the chairman of the National Health Society, read a paper at Liverpool on this subject, and will in the course of the season make a communication at the British Institute of Architects, with the view of securing the co-operation of that society also in this much-needed measure of sanitary reform.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A USEFUL BOOK.

How to Arrest Infectious Diseases. By Edgar G. Barnes, M.D. (London: T. & A. Churchill.) 1883.

Of all modern problems, none is more important than that with which Dr. Barnes deals in this little manual. If, as the science of preventive medicine teaches us, it is possible to reduce the mortality from infectious diseases to a minimum not yet seen in our health-returns, and if, by the practice of ordinary precautions, these diseases may be prevented from spreading as they now do, it seems clear that information concerning their repression is amongst the most valuable knowledge that mankind can acquire. Dr. Barnes's book is of handy size, clearly written, and free from all technicalities. It covers the ground already taken up in the earlier parts of Health by our papers on "What to do when Fever Invades the House." The chapters in this book deal with "Infection and Disinfection," with "Precautions during the progress of Infectious Disease, and with the use of Disinfectants." An important feature of the book is the section dealing with the legislation on this subject. From this chapter we take the following highly pertinent remarks:—

If a person, suffering from infectious disease, exposes himself in the street, or otherwise, to the danger of others, he is a nuisance, and indictable as such at common law; but proceedings by indictment are slow and expensive, and, therefore, this is a proceeding rarely had recourse to, the real check against wilful exposure of infected persons resting in the provisions of the Public Health Act, 1875, which I shall briefly recapitulate, referring the reader to the Act itself for more detailed information.

Section 120 runs thus:—"Where any local authority are of opinion, on the certificate of their medical officer of health, or of any other legally-qualified medical practitioner, that the cleansing and disinfecting of any house, or part thereof, and of any articles therein likely to retain infection, would tend to prevent or check infectious disease, it shall be the duty of such authority to give notice in writing to the owner or occupier of such house, or part thereof, requiring him to cleanse and disinfect such house, or part thereof, and articles, within a time specified in such notice." A similar penalty is attached to disobedience, and a similar power of carrying out the necessary cleansing at the defaulter's expense is given; but the termination of the clause provides:—

"Where the owner or occupier of any such house, or part thereof, is from poverty or otherwise unable, in the opinion of the local authority, effectually to carry out the requirements of this section, such authority may, without enforcing such requirements on such owner or occupier, with his consent, cleanse and disinfect such house, or part thereof, and articles, and defray the expenses thereof."

Section 124 provides:—

"Where any suitable hospital or place for the reception of the sick is provided within the district of a local authority, or within a convenient distance of such district, any person who is suffering from any dangerous infectious disorder, and is without proper lodging or accommodation, or lodged in a room occupied by more than one family, or is on board any ship or vessel, may, on a certificate signed by a legally qualified medical practitioner, and with the consent of the superintending body of such hospital or place, be removed, by order of any justice, to such hospital or place at the cost of the local authority; and any person so suffering, who is lodged in any common lodging-house, may, with the like consent, and on a like certificate, be so removed by order of the local authority."

Sections 126 to 129, relating to wilful exposure of infected

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

persons and things, disinfection of carriages, and letting infected houses, are so important that I quote them *in extenso* :—

"126. Any person who—

"(1) While suffering from any dangerous infectious disorder, wilfully* exposes himself without proper precautions against spreading the said disorder in any street, public place, shop, inn, or public conveyance, or enters any public conveyance without previously notifying to the owner, conductor, or driver thereof that he is so suffering; or

"(2) Being in charge of any person so suffering, so exposes such sufferer; or

"(3) Gives, lends, sells, transmits, or exposes, without previous disinfection, any bedding, clothing, rags, or other things which have been exposed to infection from any such disorder,

shall be liable to a penalty not exceeding five pounds; and a person who, while suffering from any such disorder, enters any public conveyance without previously notifying to the owner or driver that he is so suffering, shall, in addition, be ordered by the court to pay such owner and driver the amount of any loss and expense they may incur in carrying into effect the provisions of this Act with respect to disinfection of the conveyance.

"Provided that no proceedings under this section shall be taken against persons transmitting with proper precautions any bedding, clothing, rags, or other things for the purpose of having the same disinfected."

Another important means of effectually dealing with one infectious disease (small-pox) is contained in the Vaccination Laws, under which any child or person may be vaccinated at the public expense, on application to the public vaccinator of the district in which he resides, and any adult may claim re-vaccination if the available supply of lymph is sufficient for that purpose. Every child born in England is compelled to be vaccinated within three months of its birth, with the following exceptions :—

1. If the child be in such a state of health as not to be in a fit state for vaccination, it may be postponed by a certificate from a legally qualified medical practitioner, such certificate to be renewed every two months, until the child is fit to be vaccinated.

2. If the child be resident in a sparsely inhabited district in which the public vaccinations are performed only at stated intervals, say of three or six months, it is sufficient that the child be vaccinated at the first public vaccination after it has attained the age of three months.

3. If the child, having been unsuccessfully vaccinated at least three times by a legally qualified practitioner, be certified by such practitioner to be insusceptible to vaccination.

4. If the child have already suffered from small-pox.

It will thus be seen that the powers given to sanitary authorities in dealing with outbreaks of infectious disease are numerous and varied, but in some respects they are defective—*e.g.*, no power exists whereby a school in which infectious disease exists can be closed in order to prevent the spread of such disease. But is such a power desirable? I have already expressed my opinion as to the undesirability of breaking up schools which receive boarders; but is it equally undesirable to close day-schools? In my opinion, this depends entirely on the circumstances of the case, and I look upon the absence of such power as a decidedly injurious omission in the Public Health Act. My experience as a medical officer of health has led me to the conclusion that in these days of compulsory education, school attendance is often the means of propagating an infectious disease. The contact of children in school is so close, and for several hours daily they are together in a somewhat confined atmosphere, that if infection be present, it is almost sure to spread. My advice is then to exclude from attendance at school, all children who are suffering, or have suffered, from infectious disease, and all who reside in the same house with them, and to continue this exclusion in the case of children of the poorer class, in whom proper disinfection cannot usually be relied on, until a fortnight has expired longer than the periods mentioned in Chapter III., as those during which infection continues; and this process of exclusion should be carefully carried out so long as only few cases occur, but that if after so doing the disease continues to spread, and there is reason to suppose that slight cases may have been overlooked and allowed to continue attendance, then it is advisable to close the school entirely.

This omission in the Public Health Act has been remedied, so far as public elementary schools are concerned, by a regulation contained in the Code of the Committee of the Privy Council on Education; but as regards schools not under Government inspection, it appears the sanitary authorities are powerless. This regulation makes it a condition of a grant being given to a public elementary school, that "the managers must comply with any notice of the sanitary authority of the district in which the school is situated, requiring them, for a specified time, with a view to preventing the spread of disease, either to close the school, or to exclude any scholars from attendance, subject to an appeal to the department, if the managers consider the notice to be unreasonable."

* *i.e.*, knowingly.

Dr. Barnes's book is a safe and handy guide to a knowledge, not merely of the treatment of infectious diseases by the householder in respect of their isolation, but of the laws which have been framed for the due regulation of the public health in this all-important matter.

A MEDICAL DIRECTORY.

The Medical Annual and Practitioners' Index for 1883–84. (London : H. Kimpton, 82, High Holborn.)

THIS is a handy year-book, wherein the busy medical man, as well as the intelligent layman, will find much information respecting the progress of the science of healing. It contains a large amount of useful details, and forms a complete medical directory in one sense. Thus, for example, we find included in its contents a list of nursing institutions, hospitals, health-resorts (British and foreign), private and public asylums, &c. The book would have been rendered still more valuable had it contained a diary or blank pages in which memoranda could have been preserved.

A HANDBOOK OF HEALTH SCIENCE.

A Handbook of Hygiene and Sanitary Science. By GEORGE WILSON, M.D., F.R.S.E., &c. Fifth edition, enlarged and carefully Revised. (London : T. & A. Churchill.) 1883.

To accord even a single word of praise to this admirable handbook of hygiene is absolutely needless. Dr. Wilson's book has reached its fifth edition, and in its full and complete history of all details connected with health-measures, the prevention of disease, vital statistics, and sanitary legislation stands unrivalled. We have frequently been asked by readers of HEALTH to recommend them a work as a textbook for the examinations of the Science and Art Department in Hygiene. It has invariably been our practice to include this work in our list of authorities, and our selection is justified not merely by the well-known ability and high standing of the author as a sanitarian, but also by the clear and interesting manner in which his information is conveyed. The book may be regarded as the most convenient and authoritative manual which sanitary inspectors and all interested in health science can possess. It has come to rank among the standard works on health science, and the high place it occupies in scientific estimation is fully justified by the accuracy of its details and by the extent of the information it conveys. The reader anxious to ascertain details connected with any health-topic varying from ventilation to sewage disposal, and from disinfection to water-supply or vital statistics, cannot possibly consult a better or cheaper work than that under review.

OPIUM IN SAN FRANCISCO.—Every Oriental steamer brings in about a quarter of a million in opium, and, as none goes East, it is estimated that the stock on hand by July 1, when the advance in duty goes into effect, will be four millions. All the Chinese dealers carry big stocks, but the bulk of this opium is in the banks. The bankers regard it as all good, and loan three-fourths of its value on it. Not less than 2,000,000 dols. in opium, in neat 40-lb. boxes, is now in local bank vaults. The Chinese put no faith in warehouses, as they fear tampering with opium.

Sanitary Appliances, Etc.

THE ALBO-CARBON LIGHT.

We have been highly interested in the examination of this useful and, from a sanitary point of view, important invention, which seems well-adapted in every way to increase the brilliancy of gas, and to reduce the cost of gas bills in a remarkable degree. The "Albo-Carbon" system consists in the application to each light of a metal chamber (see Fig. 1) placed near the burner attached thereto, and containing a material called "albo-carbon," which is a form of white carbon as pure as can be obtained. Through this chamber and substance the gas passes, and is duly vaporised, with the result that the illuminating power of the gas is increased at least two-fold, and in some cases even four or five-fold. The material used is *absolutely safe*. It cannot explode or become dangerous in any way; it is easily renewed, and leaves no residuum. According to the consumption of gas, the renewal may require to be made from once a week to a longer period. As showing what may be done with the "Albo Carbon" system—which, it may be added, can be adjusted easily and quickly by any gasfitter to existing

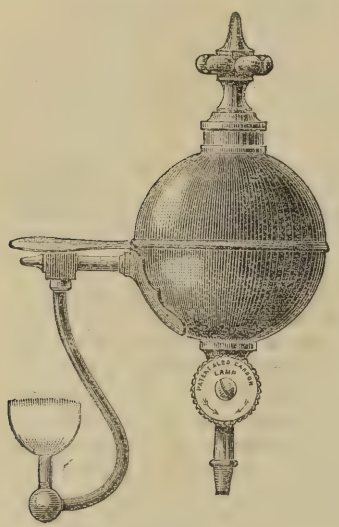

Fig. 1.

Fig. 2.

gas-brackets—1,000 cubic feet of gas will give illuminating power equal to 3,000 cubic feet. If, therefore, 1,000 cubic feet of gas cost 4s., a consumer using the "Albo-Carbon" lights may obtain for 5s. 9d.—the 1s. 9d. being the original cost of the material—illumination equal at the ordinary rate to 12s. cost. The generators hold "Albo-Carbon" sufficient for a period varying from twenty to forty hours' burning, and very elegant designs in brackets, &c., are manufactured for this system of illumination. The plain No. 2 burner (Fig. 1), with regulator, in bronzed material, costs 8s. 6d.; with opal globe, 11s.; and cut-glass globe, 12s.; while the cluster-light generators (Fig. 2) may be had at equally moderate prices. Full information and all details can be had from the "Albo-Carbon" Light Company, 132, Horseferry-road, Westminster, London, S.W.

BATEMAN'S MAGNETIC HAIR-BRUSH.

We have received a specimen of this brush, which we can recommend as a pleasant brush for ladies' use, the wires being long and flexible. There is, however, no especial virtue in its "magnetic" properties, as shown in our electrical articles. The application of magnetism in such a form to the skin or hair is practically inappreciable.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," *74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Correspondents are requested to write on one side of the paper only The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

DR. MORTIMER GRANVILLE'S "NIGHTCAP AND DREAM" THEORY.

Sir,—It would be well if Dr. Mortimer Granville accepted your offer of space to explain his views on the nightcap, sleep, and dreams, for the explanations he gives in his letter of January 4 are by no means lucid, and his physiological statements are open to grave question.

He considers that if the head proper is exposed to a low temperature, "the result must be to contract the vessels of the temporal region, face, and scalp generally, thus delivering more than the due share of blood which comes through the common or carotid artery to the internal carotid, at least on the side of the head that is uppermost."

It appears to me that in this statement he ignores the influence of the nervous system in regulating the blood-flow to different parts of the body. It is certainly true that contraction of an artery leads to diminished flow through the artery itself, and to increased flow through other arteries, while at the same time the general arterial pressure is increased owing to the increased peripheral resistance.

The regulative influence of the vaso-motor nerve fibres comes into play, however, to prevent the general blood-pressure from rising too high, the increased blood-pressure itself exciting the inhibitory centres of the vagus, and thus diminishing the cardiac contractions and preventing over-distention of the arteries. Again, it must not be forgotten that the application of cold to the head may, by reflex action, cause *contraction* of the blood-vessels of the brain. On this principle we apply cold to the head in certain cases of cerebral hæmorrhage. The reflex change in a part is often of the same nature as the local change which induces it. For example, disease of one eye often causes disease of a similar nature in the other eye by reflex vaso-motor action. Also, a reflex contraction of the vessels of the skin of one hand is produced if the other hand is placed in cold water.

I do not agree, therefore, with Dr. Mortimer Granville, that the action of cold air on the head, by causing contraction of the arteries, drives the blood from the surface to the brain. In the first place, it is doubtful if the diminished temperature of the atmosphere during the night is sufficient to produce active change in the calibre of the arteries of the head; and I strongly question Dr. Granville's assertion that exposure to the cold air contracts such vessels as the carotids. In the second place, a temperature sufficiently low to produce contraction of the scalp-vessels would more probably produce a reflex contraction of the vessels of the brain.—Yours, &c.,

Medicus.

Sir,—Will you permit me to ask Dr. Granville for information on one point involved in his theory of dreams and nightcaps? I have always understood that during sleep the brain is comparatively bloodless as compared with its waking and active condition. Mr. Durham's observations, as well as those of other physiologists, show that the brain grows paler during sleep. Now, the effect of wearing a nightcap, if Dr. Granville's theory be correct, should be to supply more warmth to the brain than (in the case of persons who are not accustomed to their use) is usual. According to ordinary (and, I believe, physiological notions of things), additional warmth to the head must mean more active circulation in the brain—assuming Dr. Granville's own views about the effect of heat and cold to be correct. An active circulation must, in its turn, imply activity of function; hence, it seems clear that the use of the nightcap should favour dreaming! If personal testimony is worth anything to Dr. Granville, I may add that I have tried of late the experiment of sleeping with a nightcap. The nights when my cranium has been so encompassed have been full of dreams, and rather disturbed. I always sleep most naturally when, as hitherto, I have my head uncovered.—I am, sir, yours, &c.,

London, Jan. 10, 1884. A Layman.

COTTAGE HOSPITALS.

Sir,—Could you, or any of your readers, inform me if the following regulation exists in any cottage hospitals in which there are twelve to sixteen beds—viz., a physician, whose duty it is to take charge of the sanitary condition of the hospital, and have under his care all medical cases not having any ordinary attendant; a surgeon whose duty it is to have all surgical cases not having a regular attendant; an assistant surgeon to take the place of the surgeon in absence, to act as superintendent, and to do the work generally devolving upon that official; the general medical staff to consist of all qualified practitioners in the district?—Yours, &c.,

M.D.

QUERIES AND ANSWERS.

GENERAL.

Alexis.—See page 24, Vol. II., Health.

Interested.—Not at present. The topic has been widely discussed elsewhere.

E. B.—1. The phenomenon you mention of "sudden shock" when falling asleep is simply a muscular, spasmodic, and involuntary act, produced by some action of the central nervous ganglia—difficult to explain, but analagous to the "start" of every-day life. 2. Awakening at a given hour determined beforehand is allied to the "expectant attention" of physiologists, whereby a given result is often in waking life "unconsciously" arrived at by ordinary thought being given to it. 3. We do not know that dreaming is most frequent when the sleeper lies on his back. That is exactly the point at issue. There is nothing specially known regarding the influence of position in dreaming.

Vox.—See Gordon Holmes on "Voice Production" (Chatto & Windus.).

B. C.—1. Club moss. 2. Mares' tails. 3. An extinct plant.

A. E.—Order of the publishers.

L.R.C.S.I.—1. Apply to the secretaries or managers of any of the companies owning the ships you desire to sail in. 2. Salary varies; a commission per head is often paid on emigrants. 3. Outfit will best be determined according to the voyage. All information may be had from any respectable outfitter.

Jas. Johnstone.—1. For full information see Huxley's "Crayfish." They are best caught in nets baited with fish. 2. Yes, the books you name are all good; but you will find "The Cat" somewhat technical. Huxley's "Crayfish" is readable and interesting, and Professor Marshall's "Physiology" is a good introduction.

A Student of Medicine.—Thanks for the pamphlets. We had seen them before. They are capital examples of "quack" literature.

A Poor Creature.—For warming one room—The "Calorigen," manufactured by Farwig & Co., 36, Queen-street, Cheapside, E.C. Price, to burn coal, £6, 6s.; gas or oil, £3. 3s. For warming a whole house—The apparatus made by Pitts & Co., Albion Ironworks, Stanningley, near Leeds. Price, about £15, I think. A letter to either address will bring diagrams and full particulars by return of post.

Olo.—See "Notes by the Way," present number.

Gruyère.—The cavities in the cheese are produced by the gases arising during the fermentation and allied processes which the cheese undergoes in its manufacture. Probably carbonic dioxide and other gases.

SANITARY.

Chemical.—From alkali works the gas chiefly emitted is hydrochloric acid. Highly destructive to plants.

Austin.—Professor Clark's process is a modification of the Clark process for purifying water without filtration.

A. G. C.—Desagniliers practised ventilation by "propulsion" in 1734. A fan was enclosed in a box and was worked by a power of any kind.

B. O. N.—McKinnell's ventilators would suit your church. See description of Buchan's ventilators in Health, No. 40.

Aglaus.—You are in the wrong. Better pay a moderate amount and save further trouble.

Tom.—See statistics we already noted to you.

MEDICAL.

G. Johnson.—No need to consult specialists in such a case. See and follow advice to "J. R." (Glasgow) in Health, No. 39.

E. W. R.—See advice to "G. Johnson" above.

Orient.—See and follow advice to "W. C. Gould," for acne or blackheads in Health, No. 40. For the pimples take the lime pills ordered to "X. Y. Z.," in present number.

White Rock.—1. Try the effect of applying zinc ointment to the affected part. If not better, write again. 2. Clothe the children warmly, and administer to each all winter either the cod-liver oil cream of Mr. Thomson, chemist, Dublin-street, Edinburgh (which young children take readily), or give plenty of fatty foods, such as ordinary cream or glycerine, &c.

Millicent Moore.—Not safe to resume the cold bath. Try the tepid bath, and resume the cold in early summer. You might try cold sponging to the chest alone as an experiment, with rapid friction afterwards.

H. T. W.—Yes; We think with time and care you will improve. In your case, we should say, you would benefit most from a course of carefully regulated liquid foods (Brand's "Essences," &c.) Benger's food is well adapted for you. We should think sweet milk should do well as a primary article of diet. For the acidity, you might try the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, one and a half drachms; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Give up the aperient for once.

Paul.—We do not know the society you name, but its prospectuses and pretensions are not in its favour.

Liber.—You seem well in your health, and appear to be troubled more by imaginary than real ailments. Live plainly; stop taking the tonic; trust to your cold baths, and, above all, keep cheerful. You suffer from no disease, and only require a little time and attention to your health to get quite well.

W. S.—Yes; the tonic you name is a good one, and may do good. In such a case as that you mention we should advise a thorough change of scene. Try the seaside for a time.

Pater.—Try a vegetable dietary by all means. Yours is precisely one of the cases which are well adapted for such a diet, and by giving it a trial you may obviate all necessity for taking medicine of any kind.

W. H. S.—See advice in No. 39 Health to "J. R." (Glasgow.)

A. B. C.—What you name is quite common in most healthy persons. You are not ill in any way, and only quacks would so persuade you. Don't be alarmed; use cold sponging, and sleep on a hard mattress.

Kilmarnock.—The case you name is one for a consultation with a good Glasgow oculist and physician. Don't delay; as all the conditions you refer to require a personal examination of the patient for their determination.

W. G. H.—No; you will get as good an opinion in Edinburgh or London as in Paris. If you desire it, we can send you addresses (on receipt of stamped addressed envelope) of reliable authorities. Don't incur expense of a visit to Paris; it is not needed.

C. Moon.—See advice to "Pater" above.

C. Ryan.—See advice to "A. B. C." above; and read, and if necessary, follow advice to "J. R." (Glasgow) in Health, No. 39. You are quite well. Don't be persuaded otherwise, for you need no treatment; unless, indeed, what you name occurs more frequently than now.

John Moore.—In such a case as yours we should recommend first, a change of air, to a bracing seaside locality; second, cod-liver oil, taken in dessert-spoonful doses thrice daily, after food; thirdly, inhalation (by the nose) of the steam arising from a pint of water (at 150 degs. Fahr. heat), into which a teaspoonful of the following mixture has been put: Oil of pine, two drachms; heavy carbonate of magnesia, one drachm; water to make up three ounces. To the cod-liver oil above named, we would recommend you to have a little syrup of iodide of iron added.

X. Y. Z.—1. Take the tonic recommended to "Hope," in Health No. 40 for a time, as a cure for the slight weakness you name. 2. For pimples try lime pills as follows:—Sulphide of lime, 2 grains; sugar of milk, 40 grains—make into 20 pills, and take one every two hours. 3. No effectual removal of hairs save by electricity, and this remedy can only be applied by a surgeon skilled in hair diseases. 4. All exercise before breakfast should be of a light kind. Dumb-bells of moderate weight should suit you, and should be used after your bath. 5. Hot bath twice a week. Depends on amount of skin excretion. Once a week change at least.

Amy Snell.—You should see a physician, as only a medical opinion given after examination of your case is likely to satisfy you. We do not think there is much or anything wrong, but a medical opinion will reassure you. Don't give way to morbid fears.

J. Murphy.—1. The case is probably one of either chronic catarrh or bronchitis. It does not, from your account, however, appear to be of severe character. Attend carefully to warmth and clothing, and give nourishing food. You might try the following when the cough is troublesome:—Carbonate of ammonia, half a drachm; spirit of chloroform, one and a half drachms; infusion of senega to make up eight ounces. Two tablespoonfuls every four hours. 2. We think you will best arrive at the information you want by consulting some good textbook of physiology (such as Kirke's), where

the subject of food is treated. The quantities of food required to sustain a man in health vary with the work, habits, temperament, &c., of the individual. Why not give vegetarianism a trial?

Joseph Brown.—The lotion you inquire about is useful in all cases where there is severe itching of the skin. Soak the scalp and crusts in warm water, and apply zinc ointment with the finger, covering the head with a skull-cap of linen. Give cod-liver oil or the emulsion internally. If not better, write again.

Nemo.—In the case to which you refer, you should obtain a wise surgical opinion as to whether or not it would be advisable for your relative to submit to the operation you name. The ailment is a constant source of weakness and loss of blood; and we think we are advising you most trustworthily in counselling you to seriously consider the advisability of an operation. We shall be glad, if desired, to forward to you (on receipt of stamped addressed envelope) the names of reliable surgeons.

Elder Lee.—Try the effect of applying a little zinc ointment night and morning to the eruption you name. If not cured soon, write again. The dose of the mineral water is about half a tumbler; but varies with circumstances of patient's health, &c.

Penitent.—You must practise self-denial, and be mentally strong, otherwise you will most certainly fall into ill-health. You need fear no effects at present; and your best remedies are active open-air exercise and cold sponging each morning. Steer clear of quacks.

London.—Thanks for your kind letter. When the London lectures are repeated, your suggestion will be duly considered. The advertising arrangements you refer to are rendered necessary for a time at least.

R. Gerner.—If you forward the manuscript according to the rules stated in our "Notices to Contributors," we will inform you whether or not it is suitable for Health.

G. B.—Under what circumstances is the "hair" you speak of brought up from the stomach? Give us a full account of the case, and we will advise you. If bitten off from the head, and swallowed (as is likely to be the case), you must see carefully to the patient's habits.

Loughborough.—See advice for acne given to "W. C. Gould" in No. 40, Health.

Delta.—We have heard of the experiment to which you refer. See "Notes by the Way" in present number.

Ellipsis.—Apply to a good surgical mechanician or instrument-maker, who will advise you regarding the best form of apparatus; but, in our opinion, you need rather prolonged rest, and we believe the true explanation of the benefit you derive from country residence is that your general health improves there, and affects the knees. We should advise a prolonged stay in the country.

Lex.—You might be the better of a tonic. Try, for a short time, that recommended to "Hope," in Health, No. 40. By strict attention to your general health the nervousness should disappear. Avoid all stimulants.

Sackcloth.—If you attend carefully to your general health you will avoid catching cold so readily as you do now. When the cold comes on try sniffing up the steam of a pint of hot water to which ten drops of tincture of iodine have been added. The cold bath in the morning should aid you in resisting cold. Don't continue the tonic longer than you require it.

B. Wells.—1. We prefer giving the Hypophosphites about half an hour or so before meals. It stimulates the appetite. 2. Consult an aural surgeon. There may be wax in the ears.

J. Lucas.—1. Read advice to "A Poor Man," in Health, No. 37. 2. Try the lime pills for pimples, ordered to "X. Y. Z." above. 3. Careful regulation of diet, rest after food, and avoidance of vegetables. 4. Too much or forcible syringing is bad for the drum of the ear. 5. *All* "fluids" are prohibited in the special cases to which you refer—water included.

Thomas.—A sea voyage is not necessary except in cases where some special disease (usually of lungs) exists. There is no evidence in your case we presume that any such condition is present. See and follow advice given to "J. R." (Glasgow), in No. 39 Health, and you will get quite well.

An American.—The case is one for careful examination by a physician skilled in nervous diseases. The cause of the attacks may be a simple one, but you will be the better for good advice in any case. We can send you address (on receipt of stamped envelope) of a reliable London authority if desired.

Pes.—We should advise you to see a professional chiropodist, who will extract the corn or callosity without pain and effectively. No local applications are of service in your case.

Achilles.—In your case mere inhalations are of little value. Practise them at night, however. What you require is (1) a course of tonic medicine, such as that recommended to "Hope" in No. 40, Health; (2) a visit for some weeks to a bracing seaside place (*e.g.* Yarmouth or Essex coast generally), or a sea voyage. Chronic catarrh is often alone cured by a visit to the sea. Try sniffing the vapour of sulphurous (*not* sulphuric) acid, kept in a stoppered bottle.

Mary Harold.—See advice to "Pes" above. Wash the feet frequently in a solution of alum and water, but remember also to look to your general health.

Spes.—See and follow advice to "Styx," in Health, No. 40, and, above all, don't be morbid.

S. W. P.—See advice to "Spes," above. At your age, remember, however, you must husband your strength, and avoid all approach to what, though not excess in a younger person, will be excess in your case.

Rutherglen.—You are evidently a highly nervous person. Learn, first of all, that health is the foundation of all mental and physical happiness, and that religion can never be thoroughly appreciated by an unhealthy man. Read and follow the advice given to "H. C. E.," in No. 40, Health. Yours is simply a case for wise and careful diet-treatment, and all your symptoms, as you have already been told, arise from feeble digestion, and not from any more serious cause.

X. Y. Z. (Edinburgh).—Yes: there are several doctors in your city who make skin diseases a study. We shall be glad to send you addresses on receipt of stamped addressed envelope.

Interrogator.—See and follow (in the case you name) advice to "H. C. E.," in No. 40, Health. It is a case for wise dietetic treatment, and the avoidance of all solid indigestible foods. Glad to be of any further service, if necessary.

Fred.—1. Take more open-air exercise. 2. Take a little "Æsculap Water" occasionally, in the mornings, as a mild aperient. 3. Avoid tea and coffee and all stimulants; and see the effect of the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, one and a half drachm; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Let us hear how you are in a few days.

D. R. Gibson.—Try the following, to be rubbed into hair roots night and morning:—Balsalm of Tolu, 2 drachms; oil of rosemary, 20 minims; tincture of cantharides, 1 drachm; castor-oil, ½ oz.; prepared lard, 1½ oz. Wash the hair once or twice a week with "Pears' Soap" and lukewarm water. If not better, write again.

Spikenard.—You are morbidly excited. We should advise you to see a surgeon, and have the structure to which you refer placed in its normal state. The state in which you describe it to be at present, is probably responsible for all the irritation to which you are subject.

J. N.—Give up tea and coffee; live plainly; avoid vegetables for a time, and take the following:—Powder of rhubarb, 4 grains; pepsine, 3 grains. Mix, and make a powder. One to be taken after a meal.

Malade.—Don't be morbid. See and follow advice to "Styx" in No. 40, Health.

X. Y. Z.—See advice to "Malade" above. If you don't and can't exert your moral control, what is the use of asking our advice? You know as well as we do that you are injuring your health. The remedy is simple—remove the cause. Your symptoms are all exaggerated in your eyes.

Canton.—Yours is a case simply for improvement in your general health. You exaggerate your symptoms, probably unconsciously. Attend to what was said to "Styx" in No. 40, Health, and follow directions there given. So long as your digestion is in good order you are by no means ill.

J. A. D. E.—Rest after food, and look well to your digestion. Take a little Morson's "Pepsine" with your food, and, for the "pins and needles," see there is no pressure on the circulation, and use warm oil to rub into your hand.

A Constant Subscriber (will please use in future a more distinctive name).—Your meat dinner is a mistake. (See article on "Meat Teas" in No. 40, Health.) Give it up, and simply take pure water as a beverage, as you are an abstainer. You may assist digestion for a time by taking a little "Pepsine" with your food.

W. F. W.—So long as you do not feel languid and weak, don't be alarmed. Keep your general health right, and you need have no fear. What you name is only a little weakness of no great moment, and only an indication that you have need of a tonic for a short time.

R. Smith.—See and follow advice to "H. C. E." in No. 40, Health. Your troubles are largely (if not solely) of a digestive kind, and when these are improved the other symptoms will disappear. You are simply "out of sorts." Attend to advice above indicated.

H. T. W.—The Turkish bath is a general means of securing skin-action and of assisting excretion. It can only aid digestion in so far as it indirectly makes the skin, lungs, and kidneys act well and

[*Continued on page* 256.

INTERNATIONAL HEALTH EXHIBITION,

LONDON, 1884.

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President—His Royal Highness the Prince of Wales, K.G.

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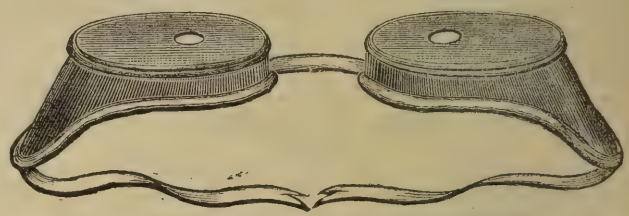

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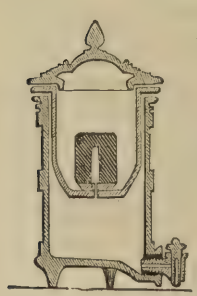

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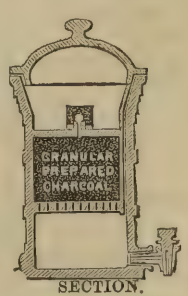

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 25, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

Our recent remarks on "wart cures" have elicited from various correspondents some interesting information regarding curious devices adopted for the removal of these growths. One correspondent, for example, writes that he has had experience of a perfect cure in the shape of raw beef, *plus* a certain mysterious work of burial, as follows:—His hands were covered with warts, and one day "a benevolent old gentleman" advised him to procure a small piece of raw beef, to rub the warts with the beef, and "immediately after doing so, to *bury* the piece of beef in the ground. As soon as the beef has rotted away," said the old gentleman, "your warts will be gone." Our correspondent acted up to the instructions received, rubbed his warts, and buried the beef. In a few days he was able to note a difference in the size of the warts, and in about a month afterwards they had disappeared. We are not informed if curiosity, either of scientific or commonplace kind, instigated our correspondent to see if the beef had undergone complete decay; but he adds that his adviser "laid particular stress" on the burial of the beef.

✣ ✣ ✣

A second communication details that saliva (the fluid of the mouth) has been found to possess a powerful effect upon corns. Our readers will remember that in "Notes by the Way," in No. 40, we alluded to the opinions of a correspondent who alleged that by wetting warts with saliva, taken from the mouth while fasting in the morning, they were made to disappear. We then pointed out that the composition of saliva was well-known, and that it contained nothing at all likely to dissolve or affect warts. The communication now before us, maintains that saliva will eradicate corns, as well as warts. Within a week, after wetting the corn with saliva, while he was fasting, our correspondent's ailment disappeared; and he adds that he has found this cure efficient in other cases.

✣ ✣ ✣

Now, these cases are highly interesting to the student of mental science. They are capital examples of the "faith cures," which are also seen when a case of rheumatism (real or fancied), has been cured by the application of an "electrical" belt, proved by scientific examination, to be capable of producing no electricity whatever. A "dominant idea" is impressed upon a person's mind that saliva is a specific for warts or corns; or the idea that raw beef will cure warts, may be further strengthened by the mysterious command to bury the beef as an essential element in the process of cure; and forthwith, in all confidence be it remarked, the patient obeys, and is cured! Persons who have not read accounts of the influence of mind over body, are often unable to credit the results that may follow. Expectation thus induced, we refer such to our articles on "Faith and Miracle Cures," to be found in our first volume, and to Dr. Carpenter's "Mental Physiology," for full details respecting the action of expectant minds on obedient bodies.

✣ ✣ ✣

Here is a case in point. Long ago a certain apparatus called "Perkin's Metallic Tractors," foreshadowed the sham "Electrical Belts" of these latter days, as agents which were warranted to cure any and every disease. These "Tractors" were believed to exert a mysterious "galvanic agency" which cured the ailments of the sufferers who resorted to the use of the apparatus. So great was the fame of these "Tractors" that several surgeons and physicians set themselves the task of investigating the truth of their claims as curative agents. The result was highly interesting. There was no doubt that "Perkin's Tractors" cured diseases, but *precisely similar cures were effected by "tractors" made of wood, and painted so as to closely imitate the famed apparatus, the patients being unaware of the deception thus practised upon them.* All that was required then, as now, for the efficacy of the cure, was the profound "faith" of the patient in the effects and power of the agent used. The burial of the beef, and the use of the saliva while fasting, in the cases above detailed, are in themselves notable items, showing how closely the "faith-cure" of to-day is allied to the witchcraft rites of past years. Here is a suggestion for some of our friends:—Let them take a tiny phial of pure water (as detailed by us in the "Notes" of No. 40 Health), and, carefully concealing the nature of the liquid from a warty subject, present the phial to the latter, assuring him that, used with extreme care, the lotion will prove an unfailing cure for warts. The result will show that what saliva accomplishes, pure water will also effect; and for that matter of it, we all know that mumbling a few mysterious words over a wart, and touching the growth (as in the so-called "wart-charming") are in themselves sufficient to cause its disappearance. The patient, by way of having duly impressed on his mind the mystic nature of the rite, might be instructed to bury the phial, *à la* the beef-burial, after using its contained fluid as an application.

✣ ✣ ✣

The experiments of Dr. Carter Moffat on the influence of peroxide of hydrogen on the voice have elicited a number of inquiries respecting the nature of this substance. Peroxide of hydrogen was discovered by Thenard in 1818. Water consists of hydrogen and oxygen combined in certain proportions, and is known in chemical phraseology as H_2O. Peroxide of hydrogen may be described as "oxygenated water," and is written H_2O_2 by chemists. The air we breathe, as most readers know, is a mixture (not a chemical combination) of the two gases oxygen and nitrogen. There are about 21 parts of oxygen and 79 of nitrogen in 100 of air. "Ozone," which is found in the air of the seaside and mountains, is oxygen in an altered, or, as chemists call it, an "allotropic" condition. Ozone is developed in air when an electrical machine is worked; while peroxide of hydrogen received the name of "antozone," under a somewhat erroneous notion of its source.

Now, peroxide of hydrogen has been proved to be a substance of high sanitary value. It is a liquid at ordinary atmospheric pressure and temperature, and can be made by suspending dioxide of barium in water, and passing a current of carbonic acid gas through the solution. It is certain that all decaying matter is vigorously acted upon by peroxide of hydrogen as a natural disinfectant; and, indeed, it is this substance which is the active principle of the "Sanitas" preparations so widely known as disinfectants. The value of Eucalyptus forests and of pine-woods, as purifying the air, is also due to their giving off substances which in the atmosphere produce peroxide of hydrogen. Mr. Kingzett, in his interesting book, "Nature's Hygiene," shows that 96,877,440,000 gallons of Eucalyptus-oil may be held at one and the same time in the leaves of trees in New South Wales and Australia. This amount of oil produces, in the air surrounding the forests, no less than 92,785,023 tons of peroxide of hydrogen, capable, in a singularly powerful fashion, of destroying decaying matter and of purifying the air.

\+ \+ \+

A HEALTH-DANGER, by no means too frequently considered, has been brought anew under public notice in Ireland. Two boys slept in a room lit by a paraffin lamp. This lamp had been left alight on their going to sleep. In the morning they were found exhibiting symptoms of suffocation. One boy died, while the other remains in a weak condition. Such a case presents a warning against the use of lamps in ill-ventilated sleeping apartments; while it also teaches us anew the high necessity for having our bedrooms well ventilated. Few persons know that the gas given off from the smouldering wick of a candle which has been blown out is highly noxious. Care should invariably be taken in seeing that complete extinction of the wick is ensured.

INTERNATIONAL HEALTH EXHIBITION, LONDON, 1884.—It has been found desirable to enlarge the scope of the Exhibition as regards Ambulance material. A special sub-committee has been appointed to deal with this subject, and they have prepared a memorandum indicating the principal exhibits which it is intended should be composed within the new group (Group III*a*., "Ambulance") which has been formed to receive them. The following is a summary of the principal appliances sought for exhibition :—1. Personal Surgical Equipment as carried by the medical officers of the army in question. 2. Appliances for treatment of wounds, carried by the soldier himself in the field. 3. Personal Surgical Equipment carried by ambulance attendants in the field, consisting of surgical haversacks (Havresacs Sanitaires), medicine panniers (Caisses Sanitaires), surgical knapsacks, field companions. 4. Ambulance Appliances carried by men, such as stretchers (Brancards), hammocks, dhoolies, and palanquins. 5. Wheeled Conveyances wheeled by men —wheeled stretchers. 6. Ambulance Equipment carried by mules, horses, &c. Cacolets, Litières, Mountain Ambulance Equipment (ambulance de montagne), cooking equipment for mountain campaigns, portable medicine chests, compressed drugs, &c. 7. Wheeled Vehicles used for the conveyance of sick, fourgons containing the equipment of hospital corps, surgery waggons, equipment waggons, field cooking waggons, pharmacy waggons, nursing utensils carried in waggons of field hospital. Books of instruction for use, diagrams. 8. Railway ambulances, consisting of carriages for wounded, with fittings, cooking carriages, and all the equipment of ambulance trains. Materials for converting ordinary carriages into ambulance carriages.

Original Essays

"Life is not to live, but to be well."—*Martial.*

QUACKS.

OF all the enemies to health, the quack is undoubtedly the most formidable and the most dangerous. It is not merely that the quack cannot, and does not, cure the malady of which he professes such profound knowledge. He also wastes the valuable time of the sufferer, and often lands his miserable victim, when too late, at death's door, when scientific advice, timely obtained, might have saved him pains and misery—or even life itself. We say nothing of the monetary frauds which the unblushing knavery of these scoundrels inflict upon those who are deluded enough to accept their offers of assistance towards "health" (?). It is bad enough, in truth, to be robbed of one's purse, and to be mulcted in ten, fifteen, twenty, or a hundred pounds, or even more, for a few bottles of coloured water, some soda powders, or some quack appliance which is about as well calculated to produce the "electricity" and "vital force" (of the advertisements) as it is capable of reaching the moon by an exercise of spontaneous movement. To lose money, we repeat is a regrettable thing; but worse by an immeasurable standard, infinitely more grievous, is it to lose, through quackish knavery, the health which may never return. It is the harm done to the body and mind alike by the filthy suggestions and the nefarious practices of the scoundrels who burlesque the noble profession of medicine—harm often irreparable in its nature—which must incite one to wish that he could—

> "Put in every honest hand a whip,
> To lash the rascals naked through the world."

These are strong words, but they are meant to describe an evil the magnitude of which few persons can appreciate or understand. There is not a village in the land which does not receive its quota of pamphlets by post, addressed by the quacks who reside in the nearest large town or city. Certain "firms" of London quacks possess agencies in the large towns, and work the districts of a county from several centres. Pamphlets written in English, the quality of which sufficiently betokens the degrading nature of the calling its writers follow, find their way into letter-boxes, and thence into the hands of boys and girls, whose minds are polluted by the immoral filth therein detailed. Were we at liberty to publish in full the details contained in letters which almost every post brings to hand, we should be able to frame an indictment against the state of the law which permits wholesale ruination of health, such as would surprise and disgust the most callous. Correspondents tell us of the shocking impostures practised by these quacks, and of the utterly baseless fabrications which form the foundations of their attack at once upon the health and purse of their dupes. Readers who wish for full details of quacks and their doings should read Dr. Courtenay's exposure, entitled "Revelations of Quacks and Quackery," published by Messrs. Bailliere, Tindall, & Cox, of London. What is therein stated—gross and glaring as are the impostures he describes—falls short of describing the real limits and nature of this canker of modern society. Before us lies the filthy production of a firm hailing from Manchester, and bearing the name of a person as the "secretary" of the firm. The inner side of the title-page—which declares the book to be "The Secret Whisper"—bears an advertisement, the character of which clearly enough indicates the degrading nature of the calling of the firm. The pamphlet

itself teems with the usual disgusting and prurient "information." One page informs us in bold capitals that there are "private waiting-rooms (*sic*) for each patient" at this establishment, and another that the "strictest confidence may be relied on." "Advice Gratis" is the announcement on another page, and the true nature of this precious intimation may perhaps be seen when, on turning to the inside of the cover, we find "The Excelsior Mixture" of the firm—"to be obtained only from the proprietors," of course—advertised at "2s. 9d., 4s. 6d., 11s., 33s., and 66s. case." This beautiful and unique production, "not sold by any chemist"—a fact we may certainly take for granted—is "sent to any part of the world packed and free from observation." It cures "all blood and skin diseases," and its value may, perhaps, be best appreciated when the astounding nature of this announcement is fully realised.

The matter of this pamphlet—forwarded to us by a correspondent—deals with the usual stereotyped subjects of quack treatment. Certain health matters of really little moment are dilated upon at full length, until the lay reader, if of an imaginative turn of mind, may well begin to fancy himself a prey to the mock disorders the quack describes. There is a dissertation, as usual, on "Marriage," and then succeeds the usual description of the ailments which this wretched fraternity specially professes to treat and cure. The members of this eminent firm, we are informed, "are always in attendance;" "Patients are corresponded with till cured;" and "Only one personal visit is necessary;" —we might add, for the effectual, and we hold illegal, lightening of the deluded patient's purse, and for the exaggeration of all his symptoms into those of actual disease.

We might detail at very considerable length the frauds perpetrated by quacks upon the public; but such matters are scarcely fit for publication in the pages of any lay journal. We might detail our visit to a notorious London quack, who, for the modest sum of five guineas, sells his victims an apparatus consisting of pieces of metal attached to a flannel belt, and who, under the name of a "Restorer," pretends that this harmless appliance will cure almost any ailment of nervous or other nature. The actual cost of producing this elaborate electrical (!) appliance is at the most a few shillings, and yet, under the idea of an electrical or magnetic wonder, this imposture is warranted to effect cures of marvellous kind. We might direct attention to the fact that there are quacks—both lay and "rev."—made known to "fame" by their advertisements in so-called "religious" periodicals, who profess to cure consumption and other equally grave constitutional troubles, and who keep a qualified physician on the premises presumably to give (through some extraordinary collusion between education and ignorance), an air of respectability to their doings. We might tell of quack companies who, under the name of "Dispensaries" and so forth, trade on the public credulity, but refuse, when asked, to disclose the names of their medical officers. We could speak of the analyses made of quack medicines, and show how coloured water is made to figure, under a grandiloquent name, as the great and unrivalled specific for disease. And, worst of all, we might tell more than one story of attempt at extortion by threats of exposure, and of youths especially, being well-nigh driven mad by the importunities of these scoundrels, who, after obtaining large sums of money from them, have fleeced their victims to the last farthing.

Such details constitute "the old, old story" of a shady side of life; but there never was a time when advice against quackery was more urgently required than now. In the streets of London and of every other city and town pamphlets of disgusting nature are daily distributed. Only a short time ago we handed to a chief constable a thoroughly immoral pamphlet, the production of a London firm, which, enclosed in an envelope, was delivered to each house in a certain thoroughfare of a northern city. The amount of evil which is thus wrought by quacks is simply incalculable; and both medical men and the public will certainly have cause to welcome the time when bogus M.D.'s of New York and Pennsylvania will be deterred by the law from practising their illegal arts in this country. The legal profession has taken care that unqualified men are not allowed to practise in our courts. Is it unreasonable to ask that in the all-important matter of health, the public should be as stringently protected from fraud?

RECENT IMPROVEMENTS IN MEDICAL ELECTRICAL APPLIANCES.

(*Concluded.*)

As has been pointed out in Mr. Lant Carpenter's articles, the condition to be complied with in a medical battery is that it must be capable of decomposing water. The human body and fluids generally, differ altogether from a metallic wire or resistance. In a wire, any electric pressure, however small, produces a proportionate flow of electric current; but, in the case of the human body, it requires a certain definite electric pressure to get any current at all to begin to pass; and, if the battery falls short of this, no current passes through the body, and the battery is useless. Hence, to show that each of these pocket medical batteries possesses this power, a small voltameter, or water-decomposing cell, is made to accompany it. This consists of a little glass tube (see A, Fig. 5), having a pair of platinum wires sealed

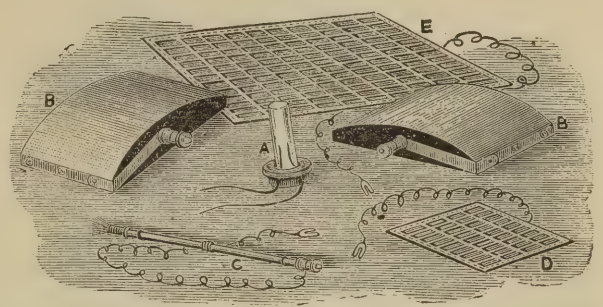

Fig. 5.—E, Flexible Medical Electrodes; A, Voltameter; B, Curved Electrodes; C, Brush Electrodes.

into it. They can be brought into connection with the black and red wires, which are the positive and negative poles of the battery. On filling the tube with a little water, a brisk effervescence ensues, which shows that the battery is forcing its electric current through the water, and tearing the molecules apart into its constituent gases—oxygen aud hydrogen. If the battery will not at any time perform this feat, it proves it is out of order and cannot send a current through the human body. All these instruments, however, are intended for the generation of smooth currents of electricity in one direction.

There is, however, another and more common mode of employing electric energy, in which the current of a small battery is not passed direct through the body, but sent through a bobbin of wire wound round a bundle of iron wires; over-

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

laying this bobbin of wire is another set of windings of finer wire, and when the current of the battery is suddenly started and stopped in the first or primary bobbin it gives rise to short, rapid, reversed currents in the outer layers of finer wire, and these short, sudden currents are passed through the body. This is called an induction coil. If we try to decompose water with this induced current, as it is called, we shall not succeed. This is not because the electric pressure is not great enough, but because the current supplied is not a continuons one, but is one made up of short currents, first in one direction and then in another. The induced current has quite a different physiological effect to the battery current, and, although capable of powerfully affecting the system, it cannot injure the skin, as the direct battery current can do if improperly applied. For this reason the induction coil is a favourite electro-medical instrument. But how often do we find a useful tool which, but for one little defect, like the fly in amber, would be invaluable? Such is the case with this apparatus. It needs a battery to set it in action, and the great public, which dislikes above all things, to have to slop about with acids and chemicals, prefers not to use it rather than to have so to do. This disadvantage disappears the moment we utilise the sealed insulite cell. Fig. 6 represents a most complete and

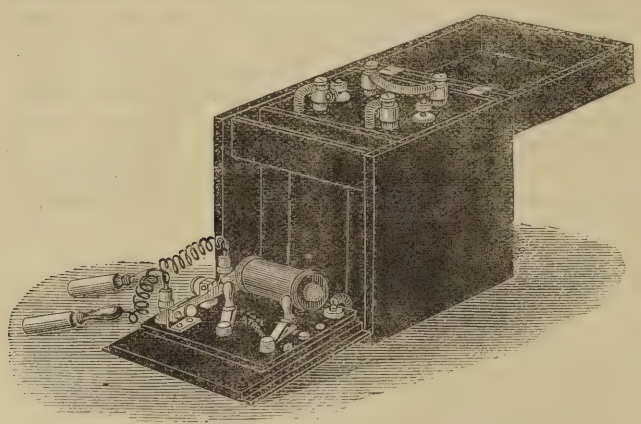

Fig. 6.—Medical Induction Coil and Insulite Sealed Cells.

carefully designed instrument. In a handsome ebonised case are two large insulite cells. One side of the box lets down like a flap, and on to this is fastened a perfectly-made induction coil. All the connections are ready-made. One little movement of a switch at the side starts the chattering-lever, which interrupts the primary current. In the centre is a device for regulating the strength of the secondary current; and, by the movement of one little lever over a series of buttons, the electric discharge can be increased or diminished at pleasure.

Above is a tray for holding the electrodes; and all the metal-work is nickel-plated, which preserves it from rust. No more convenient device could be imagined. It presents a neat appearance to the eye, and should find a place on the table of every consulting-room.

This completes the list of electric generators. We have still to notice some novelties in the mode of applying the current to the body. The most common method of doing this hitherto has been by brass tubes, having a piece of sponge inserted in the ends and connected by wires with the battery or coil. These the operator or patient holds in his hands by insulating handles, and presses on the parts to which the current is to be applied. This device is bad, for two reasons, first, it requires two hands to do it, and secondly, it does not afford sufficient surface of contact with the skin. In E and D, Fig. 5, we have represented, however, a great advance on the old design. It is a kind of pad of satteen, having on its surface a peculiar arrangement of small flexible metal plates, from eight to seventy-two in number. These plates are all in metallic connection with a silk-covered leading wire by which the pad or electrode is attached to the battery. The surface of metal is covered with a layer of moistened lint, and this pad is then bound on to the body. If frequent electrification of a limb or other part is required, these flexible electrodes can be bound on whilst dressing, and the wires brought out to make contact with the battery. The advantages of this pad are obvious. Its flexibility makes it fit perfectly any part of the body. The amount of moisture in the lint, and the time during which it is kept on, regulate the amount of resistance which the body offers to the current, and, lastly, as it is bound firmly on, it leaves both hands of the operator or patient free.*

Two curious kinds of electrodes are also figured on Fig. 5.

One is a metallic conducting brush, with which the course of a nerve may be painted with electricity. This is

Fig. 7.—Application of localised electricity to face by means of Brush electrode and tubular cells.

not to be confounded with other "electric brushes," which are electric only in name. It resembles a little paint brush, in which the camel's-hair is replaced by gilt thread, and the wooden handle by a brass tube covered with rubber. This is attached by a flexible conducting cord to the negative pole of a battery of about twelve tubular cells; and the other pole of the battery is brought into connection with the body by a flexible electrode, and the brush passed very lightly over the parts to be electrified. Fig. 7 shows its application in the case of facial neuralgia.

* The experiments of Cavendish and Maxwell, and more recently of Dr. Stone and Mr. Carpenter, have shown how enormously the resistance of the body decreases by prolonged moistening of the epidermis. The great value of these flexible electrodes lies in the fact that they can be bound on with moistened lint for some hours before commencing to pass the current. The inventor of these electrodes, Dr. Fleming, suggests the use of rose water and glycerine as a means of moistening and keeping moist the surface of the skin. The importance of this is that by a reduction in the skin resistance so much less electro-motive force, and hence fewer battery cells can be employed to give the required current. The proper way to increase the amount of the current is not to increase electro-motive force, but to reduce, as far as possible, the resistance of the current, and the resistance chiefly resides in the surface of the skin. By using these flexible medical electrodes with well-moistened lint, twelve cells can be made to pass a current which fifty or sixty will not pass if the skin is dry.

The other kind consists of curved blocks of insulating wood, covered with sheets of pure tin. Over this a layer of moistened lint can be strained, and, when these metal surfaces are connected with a battery by conductors, they afford a means of applying the current which can at the same time be glided over the surface. They are represented in Fig. 5, B B. We have thus provided in these three kinds of electrodes a means for permanent local electrisation with constant current, or for diffused or local electrisation with Faradic or inductive currents; and by the brush a means of carefully located and well-defined electrisation with either constant or interrupted current.

Where children dislike fat in a visible form, it is well to stir a lump of butter into each milk-pudding before serving it to table, and to encourage them to eat cold milk-pudding, as rice for instance, with butter and sugar.

The milk of the human mother contains a little more sugar and more water than cow's milk. So it is customary to add a little sugared water to "the milk for baby's bottle." Where there is any acidity, any "possetting" of curdled milk, it may be well to substitute lime-water for simple water, or even to add a little prepared chalk to the milk. If constipation be present a little light magnesia may be added instead of the lime or chalk.

The Truth about Oysters.—"Some delusions regarding the oyster" is the title of a paper by Dr. C. L. Dana, of New York, in the *Philadelphia Medical and Surgical Reporter*. The doctor is a lover of truth but not of oysters, or he would never have laid bare what he is pleased to term fallacies attached to our ideas of the delicious bivalve. It is a common belief, very consoling to those of feeble digestions, that the oyster, when taken into the stomach, executes, by virtue of hepatic diastase, a kind of *felo de se*, and digests itself. The doctor has tried the experiment, and put oysters, whole and masticated, into water, plain, alkaline, and acidulated, and finds the result *nil*, except in the case of the acidulated water, when prolonged digestion caused a softening of the liver of the bivalve. Fallacy number two—that raw oysters are always more digestible than when cooked—is not borne out by artificial digestion with pepsine. The oyster stew, being composite in character, is, however, not quite as readily managed by the stomach as raw oysters or those roasted in the shell. Delusion number three—that fermented liquors digest or assist the digestion of the bivalve was not borne out by fact, nor was the oft-cited experiment, that an oyster dropped into a glass of beer will dissolve, found to be correct. As a general conclusion we must reluctantly concede that the oyster is a mockery, but, like some other delusions sometimes associated with it, it will still be indulged in by ordinary mortals, who can afford it.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

OUR PAPERS ON POPULAR SCIENCE.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

[Under this heading we propose from time to time to present our readers with papers, written in a plain, non-technical, and interesting style, and dealing with the various aspects of science which bear more or less directly on health matters. The details of our bodily structure and functions, together with the description of whatever is new and interesting in the natural and physical sciences, will be treated from a health point of view by various writers. It is hoped by this means that a general interest will be awakened respecting matters which, besides possessing a relation to the aims of Health, present much that appeals with interest and profit to the general reader, and also to the student of science. —Ed. "H."

FIRST PAPER.—OUR HEARING POWERS.

By E. H. Riches, LL.D., F.R.A.S.

To understand the way in which our organs of hearing perceive the effect of a sound, and the manner in which such sound is caused, it is necessary to deal with some of the principles of the science known as *acoustics*. The word itself comes from a Greek verb which means *to hear*. When vibrations in the air are caused by any impulse or shock, or when any solid substance, being in direct or indirect contact with the drum of the ear, is suddenly struck, a sound is heard; but it must be noted that the vibrations produced in the air are the *cause* of what we understand as sound. This drum or tympanum is a wonderful structure of thin membrane closing the aperture of the ear, and in order to understand how it is that the sensation of sound is produced by this drum of the ear being struck by the vibration of air, it will be well to bear in mind that there are various tubes and cavities behind the drum of the ear, situated in the bone forming the side of the head, in which it has been ascertained that small fibres of the auditory nerve are distributed. Now this drum of the ear will vibrate freely by reason of the sonorous undulations of the external air acting upon it, and the vibrations thus produced are communicated by the action of minute bones, muscles, and fluids contained in the cavities of the ear, to the nerve, and from thence the impressions are conveyed to the brain. It must not be supposed, however, that *air* is necessary to the production of sound, although most sounds owe their origin to vibrations of the air, for even *under water* sound can be produced; and it is further known that *all bodies* are, to a certain extent, capable of producing those sound vibrations already spoken of, and also that there are many cases where air is neither the best nor the quickest conductor of sound. There is a simple but interesting experiment as to sound, which may be made with a receiver exhausted of air, in which a bell may be rung without its producing any sound whatever; and the reason why no sound is produced is at once explained by the fact that, as there is no air, there can, therefore, be no vibrations to be received or transmitted. And it may be further noted that what is understood by *loudness* of sound when conveyed by air, depends upon the *density* of the air; for example, a whisper uttered in a diving-bell is always heard with greater distinctness than under ordinary conditions, for the reason that the air in the diving-bell is greatly condensed by the pressure of water, and consequently receives and transmits vibrations with great readiness. So also at any great alti-

tude, where the air is not so dense as it is lower down, the loudness of sound is always in proportion diminished. With reference to the statement made above, that sound may be produced even under water, it is an easy matter to show that there are sonorous vibrations in liquids; for if a glass half-filled with water be placed on a table, and one finger being wetted, be steadily rubbed round the edge of the glass, a sound will be at once produced, and the surface of the water will be covered with minute undulations. The loudness of sound produced in liquids depends upon the increase or decrease of their specific gravity. We know by experience that sonorous bodies (that is bodies which produce sound), which possess the property of sonorousness in the highest degree, are those metals and their alloys which have the greater amount of elasticity and hardness. For instance, in the case of the triangle, which is a steel rod bent into a triangular form, we have an example of the sonorousness of iron; in the case of cymbals, that of brass; and in the case of Chinese gongs and bells, which are made of an alloy of three parts copper and one of tin, we have an example of the sonorousness of bell-metal. We hear of savages putting their ears to the surface of the ground to listen for the approach of the enemy, and they do this for the reason that they can with greater distinctness hear; but although *smooth* surfaces, such as ice, water, or hard ground, are the best adapted for the transmission of sound, it must be remembered that in the case of solids, when they possess *elasticity*, sounds are conveyed to the ear far more readily by them than by gases or liquids. The vibrations in the air produced by a sound move in a series of concentric circles, and the average rate at which sound travels is 1,120 feet in every second; and so it is that the flash of a gun fired at a distance from an observer is seen *before* the sound of the report is heard, for the reason that light travels much faster than sound, the former travelling at the rate of 192,000 miles in every second. It will be thus seen that this knowledge of the velocity of sound may be made applicable to the measurement of distances; for instance, suppose the report of thunder reached us two seconds after the flash of the lightning be seen, and remembering that sound travels at the rate of 1,120 ft. a second, we may calculate that the point of the thunder-cloud which gave forth the flash is 2,240 ft. distant. Now according to the same law as gravitation, sound diminishes in intensity from the centre where it originates; that is, under ordinary conditions, at double the distance it is only one-fourth as loud, and at three times the distance it is a ninth. Thus it is if we want to shout to a friend at a distance, in order to condense the concentric vibratory circles we use a speaking-horn, or put our hands together to shout through them. This is fully exemplified in the case of long speaking-tubes used in offices and large buildings, by which means we can speak to a person in a distant room or part of the building. The vast utility of the speaking-trumpet and the ear-trumpet may be readily gathered from the consideration that the sounds are reflected from the sides of the tubes, and in the case of the ear-trumpet are brought to a focus at the end which enters the ear. A striking example, showing that iron, for instance, is a better conductor of sound than air, may be seen if the ear be placed to one end of a long iron tube, and a sound be transmitted through it from the other end, when a double sound is produced, for the reason that the iron conveys the sound more readily than the air, and the second sound (namely, that conveyed by the air) takes more time to travel.

When we speak of a *solid* vibrating, it must be remembered that such actually takes place, otherwise the *air* would not be affected. For instance, the metal composing a bell is solid; but it is a fact that every time it is struck *it really changes its form*, and the particles composing it are thrown in motion. And this may be the more readily understood when we remember that no two particles of matter are in *actual contact*, for there are minute spaces existing between all those combinations of matter, which are parts of the universe, as we know it; and this, too, in the case of such substances as ivory and granite, the component parts of each in reality are in a state of separation, and are, moreover, *in constant motion*. Thus it is that as the bell vibrates, the air to a certain distance round it is *compressed* at each vibration. The air then *expands* again, and, in doing so, repeats the pressure on the air next in contact with it, and so on; and, as these concentric circles increase in number, their force is diminished, and the sound gradually dies away. In the case, then, of a bell being struck, these vibrations of air are produced as just shown; and, this air reaching the ear in an agitated state, acts with similar effect upon the drum, and the mind there upon receives the impression of *sound*.

It has been often noticed that previous to a thunder-storm the air appears to be unusually quiet, and this may be accounted for from the fact that the air is suddenly and very greatly rarefied, and, as was before remarked, the denser the air the louder the sound, so under these altered conditions the power of the air to produce sound is greatly diminished.

More might be said as to the origin and transmission of sound, but we will now pass on to vocal and musical sounds, which will form the subject of our next paper.

Pet Animals and Contagious Diseases. — The fact that pet animals can carry contagion, and thus be the means of spreading fatal diseases, is not widely known nor duly appreciated. We have heard of authentic cases in which scarlet fever was communicated from one person to another by means of a cat. Dr. Hewitt, of Lake Superior, relates a somewhat similar instance in which diphtheria was communicated by the same animal. He had noticed for several days that his pet cat was suffering from an enlargement of the glands of the neck; he also remarked the same in other cats. His cat found a resting-place in the wall behind the stove, and there died. The day the animal was removed, diphtheria, in its most violent form, broke out in his family, resulting in the death of two or three of his children, the doctor himself barely escaping with his life. Up to this time, the community was remarkably free from sickness of any kind. It was the start of a severe epidemic. We refer to this subject in hopes that more facts bearing upon it may be communicated by our readers. Such facts are at present few, but a little attention paid to the matter would, no doubt, secure much that would be of importance to comparative and to preventive medicine.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. — [Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

Fumigating Pastilles.—These are generally prepared from a mixture of finely-powdered charcoal, nitrate of potassium, aromatic substances (mostly of a resinous or balsamic nature), and mucilage of tragacanth, formed into small cones, usually with three flattened sides, and the corners at the base somewhat drawn out. Various odours may be incorporated in these pastilles. We append some formulæ:—1. *Rose Pastilles.*—Olibanum, 240; storax, 240; nitrate of potassium, 160; rose-leaves, dried and powdered, 500; charcoal, powdered, 1,800; oil of rose, 20 parts. 2. *Orange Pastilles.*—Olibanum, 240; galbanum, 240; storax, 240; nitrate of potassium, 160; orange peel, powdered, 500; charcoal, powdered, 1,800; oil of neroli, 20 parts. 3. *Vanilla Pastilles.*—Olibanum, 240; galbanum, 240; storax, 240; nitrate of potassium, 160; cloves, powdered, 160; vanilla, powdered; 500; charcoal, powdered, 1,800; oil of cloves, 10; tincture of vanilla, 160 parts. The ingredients are finely powdered and made into a homogeneous dough with a solution of about 1½ oz. gum arabic in one quart of water.

Iron Rust Spot Remover.—Cream of tartar, 50 parts; binoxalate of potassium (powdered), 50 parts; oil of rosemary, 1 part. Rub to powder, and mix well. Moisten the spot, place on a heated tin plate, and rub with the moistened powder.

Diphtheria.—Dr. Otto Seifert uses:—℞—Chinoline, 15 grains; distilled water, 1 pint; alcohol, 1 oz.; ol. menth. pip., 2 drops. It may be used as a gargle, or as a wash to swab the throat.

Circassian Pomade (*Circassian Cream*).—Oil of almonds, expressed, 1; lard, 2; benzoin pomade, 2 parts; rose pomade (French), 1 part; alkanet, q.s.; oil of rose, q.s. Melt the lard, pomades, and almond oil together on the water-bath, colour them to the proper tint with alkanet, then remove the heat, stir until nearly cold, and add 8 to 10 drops of oil of rose for each pound of product. Benzoin Pomade is thus prepared:—Fresh beef tallow, 20; fresh lard, 10; benzoin, 6 parts. Melt the tallow and lard to a temperature of about 85° C. (185° F.), place in the melted mass the benzoin (in coarse pieces, tied in a muslin bag), and macerate for several hours, keeping the vessel well covered. Then strain and let cool.

Cucumber Pomade or Cream.—Oil of almonds, expressed, 40 parts; oil of sesame, 3 parts; wax, 2 parts; spermaceti, 3 parts; cucumber juice, 35 parts; oil of neroli, 1-16th part. The cucumber juice is obtained by pressing the cucumbers, raising the juice quickly to boiling, and filtering it through linen. In order to better preserve the aroma of cucumbers, it is advisable to prepare so-called "cucumber oil" by macerating cucumbers in the finest quality of olive oil for twenty-four hours, and then using this in place of the almond oil. By adding freshly-expressed cucumber juice to fresh lard melted on the water-bath, the aroma may likewise be transferred to the lard which separates from the watery liquid on cooling. The aroma may further be imparted to oils or fat by so-called tincture or essence of cucumbers, which is prepared by digesting sliced cucumbers with a quantity of deodorised alcohol sufficient to cover them, and distilling the alcohol off after 24 hours.

Baking-Powder. — Tartaric acid, 6; bicarbonate of sodium, 8; flour, 32 ounces. Mix.

Kemmerich's Extract of Meat. — The new brand of extract of meat, made by E. Kemmerich & Co., of Santa Elena, Argentine Republic, has been analysed by G. E. Lichtenberger, and found to contain:—

		(Fray-Bentos.)
Water	16·53	22·26
Organic matter	62·65	57 51
Salts (ash)	20 82	20 23
	100 00	100 00
Among the constituents are:—		
Nitrogen	9 25	7 42
Phosphoric acid,		
in the ash	33·12	30·46
in the extract	6 89	6·16
Potash,		
in the ash	44 83	40·82
in the extract	9·25	8·27

The second column contains the figures obtained from a sample of the extract made by the original Fray-Bentos Company, analysed at the same time. We do not, however, attribute much value to the figures obtained for the latter, since we know that the composition slightly varies, and that samples have been in the market containing much less water, and, therefore, more of the various solid constituents.

To Fasten Labels on Metal.—The following composition is recommended:—Mucilage of tragacanth, 10; honey, 10; flour, 1, parts.

To Prevent Scratching Matches on Paint.—A correspondent in Florida, speaking of the defacement of paint by the inadvertent or heedless scratching of matches, says that he has observed that when one mark has been made others follow rapidly. To effectually prevent this, rub the spot with flannel saturated with any liquid vaseline. "After that, people may try to strike their matches there as much as they like, they will neither get a light nor injure the paint," and, most singular, the petroleum causes the existing mark to soon disappear, at least when it occurs on dark paint.

To Get Rid of Flies—Another suggestion towards abating an every-day nuisance is, that a growing castor-oil plant will rid a room of *flies*. Some are found dead around it and adhering to its leaves, the others disappear. It is also suggested that a similar property resides in a large Japanese lily (*Lilium auratum*), which, aside from this virtue, is one of the handsomest of its species, and would form, like the castor-oil plant, an attractive feature in any store.

Lemonade is prepared by cutting four lemons into halves, squeezing the juice into three pints of boiling water, then taking half-a-pound of sugar in pieces and rubbing the peel till the sugar is yellow, so as to get at the essential oil of the peel, and then pour the whole into a jug, cover, let it cool, and then strain. It also may be iced. When the patient is not very ill, or is recovering, it is well to add the white of an egg, and then froth up. So prepared, a nutritive drink is furnished to the patient.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

WATER-PIPES AND HEALTH.

The volume of water entering and passing through the well may be so great that the proportion of lead, even if present, may be too small to be of practical effect; nevertheless, the safe rule is to reject lead-pipe altogether for use in such connection. It is not, however, easy to suggest a proper substitute. Iron-pipes rust, and "galvanised" iron is not much better after a short period of use. Probably the best pipes now in the market are the bitumenised or asphalted pipes. These are, however, of various qualities, and in the inferior grades the coating does not in all cases thoroughly protect the iron from rusting. If the Bower-Barff process can be made a practical success, so that a perfect coating of the black oxide of iron can be guaranteed in the interior of small-size iron-pipes, we shall have in it the ideal pipe for such purposes.

We come now to that part of the subject with which we are most immediately concerned—the use of lead pipe for service pipes in connection with a public supply. The facility with which lead may be worked, and its comparative cheapness, make it *par excellence* the material for service pipes, unless the sanitary objections to its use outweigh these advantages. To decide this point we are not obliged to resort to laboratory experiment, for lead pipe has been in use for thousands of years, and even in modern times we have an abundant experience from which to draw our conclusions. We may admit that various waters are not alike in the extent of their action, that there may be some which ought not, under any circumstances, to be conveyed in lead pipes, and that lead pipes should not be used where the supply is intermittent and the interior surface of the pipes is liable to be frequently exposed to the alternate action of air and water. As a rule, however, with waters which are suited for water supply, there is next to no danger in the use of lead service pipes.

It is true, in general, that when water is introduced into a new pipe there is some corrosion of the pipe, and the water carries with it compounds of lead, partly in solution and partly in suspension. The lead soon becomes covered with a thin and closely adherent coating of compounds of lead, which are themselves but very slightly soluble in the water, and which protect the metal, to a large extent, from further corrosion. After this coating has formed, the water which is allowed to flow continuously through the pipes contains only a very minute amount of lead; if the water be allowed to remain in the pipes undisturbed for some hours, a larger amount of lead will be found in the first portions of water drawn. For this reason, while advocating the use of lead for service pipes, the writer would hesitate to advise the use of such pipe in conveying water from a spring more than a few hundred feet distant, unless the water were to be kept constantly flowing, and would advise always allowing enough water to run to waste in the morning, to clear the pipes before any is drawn for drinking or cooking. If the water be drawn through a charcoal or bone-coal filter, there will probably be no danger whatever. The term "next to no danger" was used in a preceding paragraph advisedly. There are some persons who are by nature very susceptible to lead poisoning, and some who have once been seriously affected may thereafter have a recurrence of the symptoms as a result of taking an extremely minute amount of lead into the system. For such exceptionable individuals, there is always risk in using water which has been at all in contact with lead, and they should avoid all such water, or be sure that it has been efficiently filtered through some form of carbon or spongy iron. For *hot-water* pipes the writer would not recommend lead, unless there was absolute security that the water could not be drawn by the servants to be used in cooking; such security it would be difficult to insure.

The chemical character of the coating which forms naturally in the pipes differs with different waters. The writer found, with the Boston water in 1870, that the pipes were usually lined with coating which was brown on the outside from the presence of organic matter (not of iron-rust), and that the coating underneath was almost wholly carbonate of lead. Reichardt examined the coating of a pipe which had been used in Andernach for 300 years, and found that the coating consisted largely of phosphate of lead.

How far the treatment of the pipes with a solution of sulphide of potassium, or other alkaline sulphide, may tend to prevent corrosion by the formation of a coating of sulphide of lead, the writer cannot say from experience. This method was proposed by Schwartz in 1862. It was used to some extent in Germany, and was favourably spoken of by Willm in Paris (1874). Reichardt, however, found that water passed through such pipes was not wholly free from lead, which is what we should anticipate. It is stated on good authority that the treatment with phosphate of soda which was to form an insoluble coating of phosphate of lead did not prove a success.

Where water is drawn through lead it is doubtful whether action ever *absolutely* ceases, although it may become so slight that a pipe may last several hundred years and more. When statements are made that in some cases *no lead* is present, this only means that none has been detected in the quantity of water submitted to analysis, and, in fact, it often means simply that the unconcentrated water gives no evidence of the presence of lead when tested with sulphuretted hydrogen. It seldom, if ever, means to assert that absolutely no lead could be discovered by operating upon large volumes of the water, although for all practical purposes lead may be pronounced absent. Another thing which has probably led to erroneous statements in this direction is the fact that the sulphide of lead is soluble to some extent in an excess of sulphuretted hydrogen, so that in performing the test without due care, lead may be pronounced absent when more carefully testing would show the presence of a small amount.—*Sanitary Engineer.*

WATER DRINKING.

It is somewhat surprising that, in a country in which rain falls almost every day in large or small measure, the use of pure water as a drink is not better understood than it is. Even now that the sway of temperance is well established, and continues to extend, we should be surprised to learn that a majority of Englishmen do not habitually discard the use of the natural beverage for one or other in which it is compounded with foreign ingre-

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

dients. Yet its very purity from all but a salutary trace of mineral matter is what renders it capable of exactly satisfying—and neither more nor less than satisfying—the needs of thirsty tissue, and of assisting by its mere diluent and solvent action, without stimulation or other affection of function, the digestion and excretion of food. No other qualifications are necessary. Given digestible, solid food, and fair—that is normal—digestive power, water alone is all-sufficient as liquid. During the feebleness consequent on disease or overwork everything is changed. There is blood, though impoverished in quality, to receive and convey nutritive material, and there are tissues to be fed, but the *vis a tergo*, the driving power of the heart, resides in a languid muscle, and the alimentary canal, itself but poorly irrigated from that centre of supply, receives what food is taken only to prove its incapacity to utilise it. Nature is flagging, and a stimulant alone will make ends meet in the circle of tissue-building processes. As a general rule, however, abstinence holds the first rank, both in theory and practice. We do not assert that the man who regularly, and in strict moderation, partakes of a light stimulant—claret, for instance—may not, especially if he is equally regular in regard to out-door exercise, live comfortably to the full term of human life; but what we say is that the more simply the man fares, the more he employs such adventitious measures for actual physical necessity, the more he will gain in health, in life, in working power, and in aptitude to benefit by stimulation when strength is failing from disease or from decay. But if water be the drink, how shall it be drunk? The means must have regard to the end required of them. To moisten food and prepare it for digestion it is hardly necessary to say that it should be taken with a meal; a couple of tumblerfuls at dinner is not an excessive quantity for most persons. For thirst-quenching properties nothing can surpass this simplest of drinks, and all which approach it in efficacy owe their power almost entirely to it. As to temperature, there is no real ground for supposing that one should not drink a sufficiency of cold water when the body is heated by exertion. The inhabitants of hot climates have no such objection. Some tropical wells are dug so deep that the water within them, even in hot seasons, is as cool as that of a European spring. In fevers, too, the use of ice in quantities sufficient to allay thirst is a part of rational and legitimate treatment. The shock which has to be avoided in all such states is not that which cools the mucous membrane, but that of sharp chill applied to the surface of the body. Some persons, however, find it convenient and beneficial to imbibe a certain amount of warm water daily, preferably at bedtime. They find that they thus obtain a bland diluent and laxative, without even the momentary reaction which follows the introduction of a colder fluid, and softened by abstraction of its calcareous matter in the previous process of boiling. This method, which is an accommodation to jaded stomachs, has its value for such, though it is not great even for them; but it affords no noticeable advantage for those of greater tone. The use of water as an aid to excretion deserves some remark. In certain cases of kidney disease it has been found to assist elimination of waste by flushing without in any way irritating the kidneys. Everyone is probably aware of its similar action on the contents of the bowel when taken on the old-fashioned, but common-sense, plan of drinking a glass of water regularly morning and evening, without any solid food. Whatever may be true of harmless luxuries, enough has been said to show that health, happiness, and work find stimulus enough in the unsophisticated well of nature.—*Lancet.*

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

RECREATION.

What we principally need is a general recognition of the fact that pleasure is a moral duty, and as necessary to man's perfect and wholesome development as work; coupled with this a stronger public opinion, which must create the desire to promote all innocent recreations, and to organise a scheme of amusement by which people can be taught what is pleasure, how to get and how to value it. Once the national recognition of man's need for pleasure becomes a fact, the supply of pleasure will be equal to the demand, and the stream of tendency will be quietly guided into the right channel. There seems no reason to doubt that amusements can be made elevating and yet self-supporting, and eventually, by encouraging habits of thrift and economy, and diffusing a higher standard of moral duty, advantageously relieve the rates. There is an obligation laid upon the educated and the holders of property not to stand aloof, inert, wrapped in a mantle of selfish indifference, for if they have acquired political interests and rights, they are also bound by social interests and duties.

One of the deterrents to enthusiasm may be found in the fact that it does not pay to be a social reformer. He cannot be a party man, for he must view the subject from a wider and more catholic standpoint; he is of no value to a Government, rather a thorn in its side, and he can expect neither honours nor promotion. Therefore, practically, what is everybody's business is nobody's business, and as the State cannot and will not interfere, such things are left to the spasmodic and characteristic attempts of private charity. And the inadequacy and waste of charity which is not conducted on some system is every day more apparent. The various suggestions here given would, no doubt, entail an enormous expenditure of money and patience. The money would probably be returned in time with interest; the patience must be its own reward.

But there are numbers of people to whom money is not of paramount value, and there are numbers on whom a sense of the tragedy of life presses with such an unbearable weight of sadness and despair that they would gladly do all in their power to alleviate, if only in the smallest degree, the ills caused by want of thought, the accumulation of capital in the hands of a minority, and the increasing struggle for life rendered inevitable by the remorseless results of a highly complex civilisation. Let us endeavour to spend more time in righting the just balance of toil and pleasure, more money in recreation, so that less need be spent in crime; let us inaugurate the advent of prevention rather than cure, as has already been done to some extent in medicine; let us train up healthy men and women instead of miserable, degraded criminals; let us empty our gaols and reformatories, and fill our concert-rooms and our picture-galleries; let laughter reign in the place of sullen defiance, and let us not refuse to acknowledge the inexorable aspirations of humanity and the entreaties of heart and brain crying out for legitimate satisfaction.—*Lady Grenville in the "Fortnightly Review."*

Chappuis' Daylight Reflectors for Schools.—Factory, 69, Fleet-street.—[Advt.]

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

UNINFLAMMABLE DRESS-MATERIALS.—At this season of the year we are accustomed to hear of sad fatalities arising from the accidental ignition of the highly inflammable materials which usually compose the "dresses" of females. Although many practical suggestions have been made from time to time with the view of popularising uninflammable dress-materials, the use of such incombustible articles of apparel does not appear to have found favour with the fair sex. Tungstate of soda has been the material most frequently employed to render light fabrics uninflammable; it fulfils the purpose admirably, but its high cost has been an objection to its use. Patera's formulæ has stood successfully frequent trials of their efficacy. One of these preparations is made by dissolving three parts by weight of biborate of soda and two and a quarter parts of sulphate of magnesia in twenty parts of water. Fabrics soaked in this solution become coated with a borate of magnesia, which is insoluble in hot or cold water, and is a good resistant of fire. The other preparation is a mixture of sulphate of ammonia with sulphate of lime, or gypsum, in proportions of one part of sulphate of ammonia to two parts of gypsum. The gypsum is said to form with the ammonia a double sulphate which has not the disagreeable properties of the ammonia-salt. The action of this preparation seems to be twofold—first, in coating the fibres of the material to be protected; and also in the production, when the material is brought to a red heat, of volatile ammonia, which tends to smother flame.—*British Medical Journal.*

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SCARLET FEVER.—Dr. Oxley, writing in the *Lancet*, says:—"With reference to the spread of scarlet fever I need not detain you, as there are so many sources to which you can refer as to the management of patients with a view to isolation. One remark I would make, and that is with regard to the disinfectant best calculated for our purpose. After considerable experience I strongly advise chloride of lime as a disinfectant of the air, and carbolic for the clothes and drains, as well as in the form of soap, and added to the baths as a disinfector of the body. The rubbing of the body all over with some greasy substance is undoubtedly an excellent plan to prevent the peeling skin from flying about, but I consider it unnecessary to add to the unguent any disinfectant, unless it be some mild resin. I would not have alluded to this had I not seen a letter in one of the medical journals denouncing the practice as dangerous, "filling up the pores of the skin," &c. I can say with confidence that we can with perfect safety to the patient prevent the dry desquamating skin from flying about the room by this means.

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FASCINATION.—M. Brémond has made, on sailors, soldiers, and officers, from fourteen to twenty-six years of age, a large number of experiments showing that lethargy, catalepsy, and somnambulism can be produced in healthy non-hysterical people, and that these phenomena are preceded by a peculiar state of fascination. The period of fascination is characterised by a sudden increase in the frequency of the pulse. One-third of the young men experimented upon manifested one or more of the above-mentioned symptoms.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

The Book of Health. Edited by MALCOLM MORRIS. (London: Cassell & Co., Limited.)

THE eminent publishing house of Messrs. Cassell & Co. have on more than one occasion laid the public under a deep debt of obligation by the handsome and trustworthy information which they have dispensed on the subject of health. We lately had occasion to review in terms of praise "The Family Physician," published by this firm, and there now lies before us a large and handsomely-bound volume, printed in clear type, and bearing the title of "The Book of Health." The title-page gives no evidence at first hand of the care and discrimination with which the materials of this work have been selected. Edited by Mr. Morris, F.R.C.S., the list of contributors to this work whose services he has contrived to enlist, is found to include the names of some of the most eminent physicians and surgeons of our day. Sir Risdon Bennett, Sir Joseph Fayrer, Dr. Bristowe, Dr. Joseph Ewart, Dr. Russell Reynolds, Mr. Savory, Mr. Tomes, Mr. F. Treves Dr., Hermann Weber, and Mr. Cantlie have contributed to this volume; and the presence of the names of such men on the title-page is in itself a sound guarantee that the material of the work will not only bear minute criticism, but will also be found to contain advice and information of the most trustworthy character.

Looking through the contents of the book, we find that each writer has wisely confined himself to the full and popular treatment of a special subject. Mr. Morris has presented us with a "symposium," so to speak, of eminent medical men, all speaking with authority on the respective topics of which they treat. Mr. Savory, for example, writes an introductory chapter, in which he reviews the general functions (or physiology) of the living body; and supplies therein full details of the general actions through the performance of which life is maintained. We have carefully perused Mr. Savory's article, and are able to speak in the highest possible terms of its excellence and plainness, as an account of the body's work, and of the causes through which that work may, in the varied accidents of life, be disturbed. He is eminently philosophical throughout his discussion of the questions which crop up for solution in the course of his physiological journey, and nowhere do we find scientific accuracy sacrificed to popularity of expression. Any one reading carefully Mr. Savory's paper, cannot avoid obtaining a full and clear account of the foundations of health-science. It is gratifying to find that our own policy, in maintaining as a standard rule that a true knowledge of health-laws can only be founded on the appreciation of what physical life is and what our bodily processes mean, is endorsed so fully by such an eminent authority as Mr. Savory himself.

Sir Risdon Bennett follows Mr. Savory with an account of "Food and its Uses in Health." Here, again, we perceive the exercise of a wise editorial policy. Very many of the derangements of health arise from ill-regulated habits of food-taking. The necessity for a knowledge of what foods we require, how much food we need, and when food should be taken, becomes plainly apparent to all when we reflect on the fact that the exercise of the great function of nutrition is the primary duty of the living body. It is needless to add, that throughout his article Sir Risdon Bennett writes in a clear fashion. His remarks on the

various dietaries required for different ages should be perused with interest by all, and a large amount of information of the most valuable kind is afforded on all food-topics likely to prove of importance to the general reader. Succeeding Sir Risdon Bennett comes Dr. Lauder Brunton, who, in some measure, overlaps the subjects of his predecessor in his article on "The Influence of Stimulants and Narcotics on Health." The value of alcohol, and the place and power of this agent for good and evil, are duly and most temperately discussed, while other forms of stimulants—from ether and opium to tobacco, cocoa, kola nut, tea and coffee—are duly noted, and their effects plainly described. Dr. Brunton leans to the opinion that alcohol is a food, but not a convenient form of nourishment. He adds that it agrees with sugar in

Fig. 1.—The Divided Skirt.

many respects, and that it appears to undergo combustion in the body, seeing that it is not excreted; but lessens the combustion of other foods. His remarks on the influence of alcohol on the nervous system are pregnant with importance, and he is careful to note the immense differences presented by various drinkers—*e.g.*, the beer-drinker, wine-drinker, and the consumer of whisky. Altogether, Dr. Brunton is to be highly congratulated on the success with which he has treated a topic no less of individual than of national importance.

Dr. Crichton Browne deals with a topic which in these latter days has come prominently to the front in many ways—namely, "Education of the Nervous System." This article is emphatically one for the teacher and the parent, and the cautions with which it teems against the "forcing" system might well be laid to heart by all interested in the healthy upbringing of the young. Mr. Cantlie deals with "The Influence of Exercise on Health," in a broad and liberal spirit. He describes the various kinds of games, and shows the special influence each form of recreation possesses on the muscles and other organs. His remarks on "Girls' Work and Exercise" are worthy of perusal by the heads of girls' schools, as a strong argument in favour of the absolute necessity for enlarged opportunities of physical exercise in the healthy upbringing of the female sex.

Mr. Treves, in his article on "The Influence of Dress on Health," is in his element. His paper will prove more than usually interesting to both sexes, and he sets forth in detail the considerations which influence the man of science in declaring for or against special styles of dress and clothing. The subject of the divided-skirt (Fig. 1) receives Mr. Treves' attention amongst other details. He declares this dress to be "certainly sensible, and fully in accord with hygienic principles." Each limb in the dress designed by Lady Harberton "is separately clothed by its own 'skirt,' and the extremities are thus clad by what are practically trousers. By an ingenious arrangement of the material, however, the division between the two limbs is scarcely obvious, and the general aspect of the costume is much less pronounced than may be imagined."

The remaining articles in "The Book of Health" deal each with topics of high importance. It is almost impossible to select one which ranks before another in point

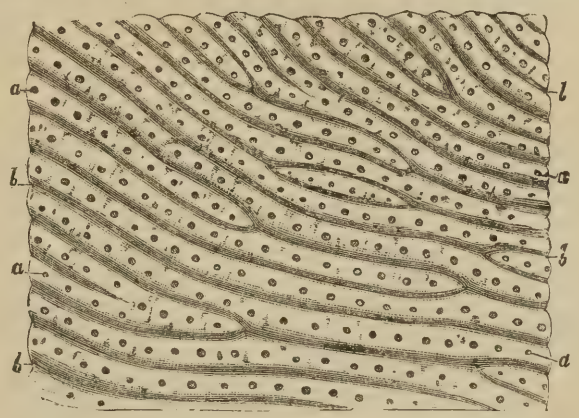


Fig. 2.—The Openings of the Skin-Glands in the Hand.

of interest—so well chosen are the subjects, and so lucidly treated are all the details. For example, the articles by Dr. Pollock on "Surroundings and Health," by Dr. Reynolds on "Travelling and Health," by Dr. Murphy on "Health at Home," and by Dr. Cheadle on "Health in Infancy and Childhood," treat of topics, the importance of which no one may deny. Again, Dr. Dukes, in dealing with "Health at School," is careful for the most part to avoid colliding with the remarks of Dr. Browne already noted, and takes the subjects of the schoolroom, dormitories, sickness in the school, &c., as his special field. Very interesting papers on the "Eye" and "Ear" and on "Throat, Voice and Speech," are contributed by Messrs. Power, Field, and Dr. Bristowe respectively; while the "Teeth" could have been allocated to no abler hands than to those of Mr. C. Tomes. Mr. Morris, the editor, deals in his turn with the "Skin and Hair." These latter topics are of every-day importance, and may be said to bring us face to face with the æsthetic aspects of health. A most lucid description is given by Mr. Morris of the structure of the skin, including the sweat-glands and their openings, the openings of those on the palm of the hand being represented in Fig. 2, where the openings (*a*) of the sweat tubes are shown, together with the ridges of skin (*b*) which separate

them. Mr. Morris is also careful to give full details concerning baths and bathing, and such information tends to make his contribution of highly practical nature. "Health in India" and "Climate and Health-Resorts," treated by Sir Joseph Fayrer and Dr. Weber respectively, form the concluding articles of the volume, which thus, in the variety and fulness of its contents, is found to embrace the information which, besides enabling us to preserve health in the home and as individuals, shows us where to seek and find health abroad.

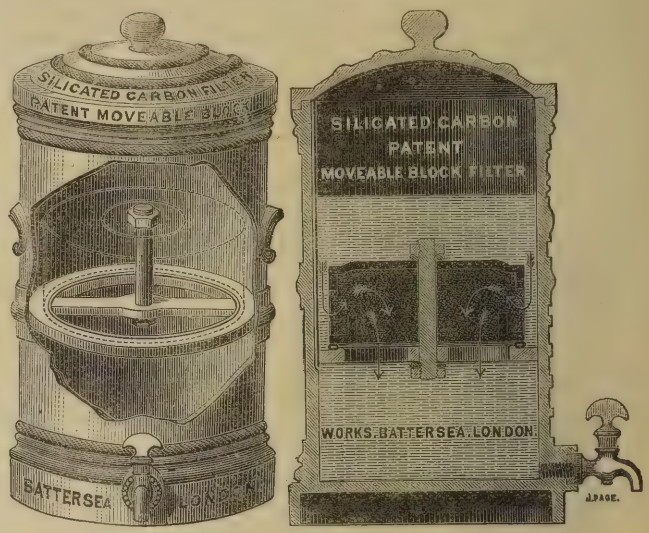
If the axiom that "good books diffuse light" be admitted as true, assuredly "The Book of Health" will stand as a high example of a medium from which much mental effulgence may be derived regarding topics of supreme import to rich and poor alike. We know of no book which, more readily than this, we can recommend for purchase by the intelligent householder, parent, teacher, or student of health in any of the phases or aspects in which hygienic science may appeal to mankind. There is literally not a page which does not teem with instruction, and from which the reader will not glean some items of information likely to benefit him in the search after healthy living. To seek health through an intelligent education in sanitary laws, has fortunately become something more than a dream of our times. No higher praise can be awarded to this book than to say that it is eminently calculated to assist all in their endeavours to live wisely by the light of exact knowledge and clear details.

Closets.—In general we can make the following demands upon all good closets:—They should be as simple as possible, and have a minimum of moving parts, which are more or less likely to get out of order. A closet with a complicated mechanism should always be condemned. The foul matters should drop into water quickly as possible, in order to deodorise them, as well as to prevent them, as much as possible, from touching the surface of any part of the closet. In hopper closets this condition can only be approached with difficulty; but by making them short, to reduce the fouling surface, by placing the outlet pretty well back, and by having an abundant flush of water, little trouble from the adhesion of soil will be experienced. In fact, all closets should be liberally supplied with water, and in order to make the flush effectual, the whole quantity, about two gallons for each use, must be introduced suddenly. In the best closets it enters the bowl at once from around the entire upper edge, which is provided for the purpose with a so-called flushing rim. The water rushes down the sides of the bowl with sufficient force to cleanse them, and in the case of the "washout" closets to drive out the contents of the bowl into the trap. The water used for flushing should be drawn from special tanks or cisterns, to be used for no other purpose. It is very objectionable to get it directly from the supply pipes, except where a constant and great pressure of water can be had at the closet, for it often happens from various causes that the available quantity in the pipes is so much reduced as to be quite insufficient for flushing. Sometimes the draft of water in a lower story will *entirely* stop its flow at the closet, and if the valve is open, even suck foul air back into the pipe and contaminate the water, which later may be drawn from a near faucet for drinking purposes. Hopper and "wash-out" closets, to work satisfactorily, should always be flushed from tanks. The former should, in fact, have automatic arrangements for the purpose, because the soil is not seen, except in very short hoppers, and the flushing consequently is often neglected.

Sanitary Appliances, Etc.

THE SILICATED CARBON PATENT MOVABLE BLOCK FILTER.

The Silicated Carbon Filter Company, of Battersea, has recently patented a new Movable Block Filter, of which we now give drawings and particulars. By means of a division inside the filter, an earthenware spindle is made to pass through the centre of a silicated carbon block, which is securely bolted down to a hollow india-rubber flange. The removal of a nut releases the block, which can thus be instantly taken out, leaving the whole of the interior of the filter open for inspection or cleansing. The working parts are all stoneware, and no corrosion is possible.



The block itself being non-porous on the top and edges, an upward direction is given to the water, which is thus made to pass through a greater thickness of the silicated carbon, as shown by the arrows in section. Extra blocks are supplied with a filter when desired, while all parts, being interchangeable, can be replaced in case of accident without the filter itself being returned to the makers. We are informed that this patent can be adapted to all patterns manufactured by the Silicated Carbon Filter Company without increased charge, and that filters of other makers can, if desired, be refitted on this principle. The Patent Movable Block Filter is designed to meet a growing demand for a filter of which every part is accessible for cleansing, and in which the filtering medium can be removed by the user himself as often as required without returning it to the makers, on the attainment of which object we may fairly congratulate the Silicated Carbon Filter Company.

Woman's Mental Constitution.—It must be remembered that, in many respects, the female organism is far more delicate than that of men. This is especially so at adolescence. The machine is less tough, and breaks down at slighter causes. It has more calls on it. It needs more careful management. It is not steady in its action, but irregular. It is not fitted for the regular grind that the man can keep up. Having beauty and harmony as two of its great ideal aims, its strength is not so great. Having to lay up more for the future, it can't expend so much in the present. Sensitiveness always implies delicacy, and in many cases instability, in nature. Even suppose it is granted that it was a good thing for a woman that her brain should contain all the book-knowledge that many modern educationalists demand, this good thing might be altogether counterbalanced if the labour of acquiring it stopped one inch of growth, or diminished the joy and organic satisfaction of life one iota. If the men of the future were to suffer and be degenerate through it in the faintest degree, then it would be radically bad.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "THE PUBLISHER," *at the same address.*

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LETTERS TO THE EDITOR.

CHILDREN'S DRESS.

SIR,—I thought that my article, referred to by Mr. H. Maxwell, was written in perfectly plain English, yet my meaning seems to have been quite misunderstood by him. The gist of the sentence to which he takes exception is, that after a child begins to walk it ought to wear well-fitting boots, which must be comfortable, but yet not so loose that the feet may spread, and thus become disfigured. That ill-clad feet do become disfigured in this way is proved by every-day experience. His analogy between children's feet and young ladies' figures is logically false, since the feet have to bear the whole weight of the body, while the figure has obviously no such function to perform. If, however, Mr. Maxwell wants my personal opinion on the subject of corsets, I am happy to give it, as it may be also of interest to others now when there is such an outcry against that article of dress. Under the present conditions of dress and society I think corsets desirable for all but very thin women. Though opposed to tight-lacing, I consider that stays, when light and well made, help to distribute the weight of the skirts, and to maintain the body in an upright position, and I am not at all favourably impressed by the appearance of those young ladies who have renounced their use. They all look limp, invertebrate creatures, and I have not seen one without a confirmed stoop.
—I am, sir, yours truly, ADA S. BALLIN.

14, Tavistock-square, London, Jan. 14, 1884.

THE DANGER OF INHALING SEWER-GASES IN THE STREET.

SIR,—From the intimation on page 225 of the death of a policeman at Croydon, it would appear to be again proved that typhoid fever may be contracted from the inhalation of the emanations from a public sewer even in the street.

Various parties have pointed out the great danger from this cause. I have often done so myself in the London journals, and especially condemned the use of gully gratings at the edge of the pavement as open sewer ventilators.

The insertion of an outlet sewer ventilator in the line of the pavement at crossings, also anywhere at busy crossings where it is a nuisance, has been written against. In the *Building News*, a year or two ago, a letter appeared from a gentleman, stating that he and a friend had contracted typhoid fever while standing near a sewer ventilating gully at edge of pavement waiting upon a tramway car. I suppose they had been speaking, and so inhaled mouthfuls of the sewer air contaminated with disease germs.

Various people, and in some cases otherwise able sanitarians, have pooh-poohed the danger from sewer air in the open street, asserting that the fresh air, or the oxygen in the air, counteracted or prevented evil effects in the open air; but this is so far a mistake. Even supposing the fresh air did counteract the danger from the sewer emanations, it requires time to do so. The fire will boil water in time, but it takes time, and if a person happens to be upon the leeward side of a sewer-grating when a large body of sewer air rushes out, he may inhale it about quite as strong as if he were inside the sewer. In fact, by breathing only through the nose in the latter case and not speaking, a person may be much safer than breathing through the mouth in the streets in the former.

I believe many children have been poisoned by these gully-gratings, which act as sewer ventilators, while playing near or over them at the edge of the pavement; and I would therefore hope that the death of this policeman at Croydon, by again calling public attention to the matter, will have the effect of causing some practical steps to be taken to put a stop to this dangerous nuisance and evil. I have often been disgusted myself when walking past some of these gully-gratings when they were letting out bad air from the sewer.

Like smoke, sewer gas should be blown off at as high a level as possible, not openly under our noses and mouths, and without even what, in many cases might be a safeguard to some extent, if properly carried out, viz., filtration through some protective machine.—I am, yours respectfully, W. P. BUCHAN, S.E.

21, Renfrew-street, Glasgow, Jan. 12, 1884.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending HEALTH to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of HEALTH, to address their inquiries to the Publisher, *and not to the Editor.*

Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.

We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.

GENERAL.

SAMBUCUS.—The preparation is not, as you suppose, extinct. It is manufactured still in Germany.

EXOTIC.—Try the first-named; it will suit you very well.

EXCELSIOR.—From ten to twelve, we believe—not more.

FEVER.—Sir William Jenner and Dr. Perry, of Glasgow, were amongst the first to distinguish between typhoid and typhus fever. The former certainly completed the distinction, and brought our knowledge of each fever to a settled condition. Sir W. Jenner's work was done between 1849 and 1851.

A. X. L.—See our papers on the "Germ Theory."

BRODIG.—Not more than 10 per cent. we believe; you might safely increase the quantity to 15 per cent.

OVERLOOKER.—"Falling sickness" is the popular name for epilepsy; "Menière's disease" is a term for certain symptoms described by that physician in 1861, including a tendency to fall to one side, which was believed to be associated with disease of the semicircular canals of the ear. There is no cure or treatment, save giving large doses of bromide of potass.

TRICHINA.—A round worm of minute size, contained within a capsule, and found imbedded in the muscles of the pig.

ALLOA.—There is no such condition.

B. A.—Apply to the publishers, please.

MRS. E. PARKER.—Schramm's "Boncontour Belt" may be purchased of the maker.

GYM.—There is a gymnasium at No. 75, Albany-street, N.W., which you might visit to see if it suited your requirements. If not suited there, write again, and we will give other addresses.

PEROXIDE OF HYDROGEN.—See our "Notes by the Way," No. 41, HEALTH, and also our remarks on Peroxide of Hydrogen in "Notes" of present number.

B. HIPPISLEY.—See Editor's testimonials.

SANITARY.

G. ALFORD.—You have no claim. The landlord is not entitled under such an arrangement to effect the repairs you speak of, even if it be proved they are necessary from a health point of view.

OXFORD.—1. Terebene or cupralum powder. 2. We prefer "Sanitas."

ANTHONY.—1. Write to the patentees. 2. There is no restriction, so far as we know.

CECIL.—The outlet is too low; try it, say, 3 ft. higher.

F. O.—Any of the electric-bell makers will supply the information you seek. The British Insulite Bell is extremly convenient and handy, and does not spill acids or other fluids.

ANDREW LANG.—Disinfection, to be thorough in such a case, would require, we imagine, to be of such force as to destroy the clothing. Why preserve the clothing at all? There is great risk in such a procedure.

Building.—A man of your attainments should be able to obtain a situation as a sanitary inspector, or in some capacity where your health-knowledge would be available and useful. You might put yourself in communication with the Sanitary Inspector's Association, and attend to the advertisements of such situations which the daily newspapers often contain, and which are also found in those journals devoted to health-science.

MEDICAL.

John Harvey.—You do not describe any symptoms from which you specially suffer. Let us hear exactly of what you complain, and we will endeavour to advise you.

B. Gill.—Take fifteen drops of *Fer Bravais* in water thrice daily between meals. The cold bath may be continued.

G. P.—We think you would benefit by trying a vegetable dietary for a time, as that would relieve the constipation which causes you trouble and pain. Use injections of cold water, and you might also add a little tincture of perchloride of iron to the water with advantage. "Æsculap" mineral water might occasionally be taken in the morning as a mild aperient. Glad to be of any further service.

Bookstall.—No need, we should think, for you to be alarmed in any way. The "cracking" is not connected with any such affection. By way, more of a mental than physical satisfaction, you might take for a short time a dessertspoonful thrice daily of a mixture of 2 drachms iodide of potass and 6 oz. infusion of calumba. This mixture might be repeated, at short intervals, for a few months.

C. H. Thomas.—(We never reply to correspondents by letter unless in special circumstances.) You are needlessly nervous and excited over yourself. See and follow advice given to "J. R. (Glasgow)," in Health, No. 39, and you will soon recover. But you should know that your case must be as much mental as physical. Steer clear of all quacks, who flourish on cases like yours.

W. D. D.—Try the following: Santonin, in powder, three grains; sugar, in powder, twelve grains. Mix. This powder to be given at bedtime to the child. The dose may be repeated after the interval of a night.

C. F. J.—Use a little plain "Vaseline" applied to the inside of the nostril when the affection threatens to come. If this is not effective, write again.

Arthur Harvey.—1. No dye of the kind you require is known, except one that contains lead, and this we cannot advise you to use. 2. Hot salt foot-baths and rubbing in warm oil at night. 3. Inhalation of the iodine vapour as recommended to "Sackcloth" in present number.

D. E. P.—We have no confidence in such a preparation, or in any such methods of treatment. You will find the tonic recommended to "Hope," in No. 40, Health, a reliable preparation in every way where such a tonic is required. It contains "phosphites" in a form eminently serviceable and judiciously combined with other tonic drugs.

L. L. D.—Each case must be judged on its own merits. It is, as a rule, best to take a tonic regularly for a time, and to watch the effect of the medicine with care on the system. The tonic should then be stopped for a time, and the general health, diet, &c., attended to.

Matilda.—1. Use a little plain Vaseline as an application at night to the lips. If not better, write again. 2. We do not know anything of the French preparation you speak of. 3. Yes; the tonic you name is by far the best of its kind made. Take a teaspoonful thrice daily in a wineglassful of water before food as an appetiser and tonic.

Leslie.—You do not give any particulars regarding your symptoms. From your own account you suffer from palpitation. Is your digestion in good order? Describe your health and habits, &c.

An Anxious Father.—In the case of the children you name, we should strongly advise you to dose them thoroughly during the cold weather with cod-liver oil or with the cod oil emulsion. They must have plenty of fatty food, cream, milk, &c. By bracing them up in this way, and attending to their clothing, you will save them much illness and strengthen their constitutions at the same time. In the other case, you should consult the Professor of Midwifery in the University of your city. Don't leave the old country save on good medical advice.

A Lover of Health.—No formula or recipe is of advantage in the case you name. Try the simple plan of rubbing in pure Vaseline each night as a hair and skin stimulant. You may be constitutionally deficient in "whiskers."

Santé.—Yours is a case (1) for abstinence from *all* stimulants; (2) for extreme care in all eating and drinking; and (3) for reading (and following) the advice regarding the treatment of indigestion given to "H. C. E." in No. 40 Health. Give up quack medicines, and if not improved, write again.

A. B. C.—Try Platel's "P. P. Ports" (to be had from Platel, Brixham, Devon), which can be recommended as pure, and adapted for invalids. A wine of the age you name would likely be somewhat too heavy if the invalid were at all of delicate nature as regards digestion, &c.

W. A. J.—Your questions are rather numerous for one letter. 1. Palpitation, as a rule, depends on digestive disturbance. See to your digestion, and rest after meals. 2. Consult an oculist for your eyes. 3. You suffered, possibly, from a little bronchitis, from which you appear to have recovered. Take the tonic recommended to "Hope" in No. 40 of Health. 4. It is utterly impossible to say anything about the hearing in the case you name. Certainly, marriage could have no effect in inducing or curing it. Why not have a thoroughly good opinion regarding the ear? That is your only chance of attaining certainty.

E. J. Lamb.—Don't be nervous about yourself. Read and follow the advice given to "J. R. (Glasgow)," in Health, No. 39. You will get quite well by attending to the directions there given; but you should also know that what you mention (unless too frequent) is, as often as not, a sign of health.

Everest.—See reply to "E. J. Lamb," above; and follow advice therein indicated. Don't be morbid, above all; and write again if not cured.

Semaj.—Yes; restrict washing of the head for a time. Wash only once a week with Pears' Soap and lukewarm water, and use the application recommended to "D. R. Gibson," in No. 41 Health. Let us hear from you again if not improved.

Isa N. P.—No; nothing short of a surgical operation can remove such a mark, and we would not advise you to attempt this. The only effectual way of removing hairs is by electrical means, applied by a specialist in skin or hair diseases. One form of depilatory, however, for removing hairs is made as follows:—Sulphide of sodium, three drachms; lime, ten drachms; starch, ten drachms. Mix with water to make a paste; apply to the skin for two minutes and then scrape off.

E. M.—See and follow advice given to "J. R. (Glasgow)," in No. 39 Health, and, above all, be cheerful. You will get quite well by attending to directions there given.

O. G. R.—The treatment for styes is simple. A mild aperient should be given; the food should be light for a day or two, and the eye should be fomented with hot water through the day, while a bread-and-water poultice at night should be applied. For the *prevention* of styes, the simple means is attention to the general health. A stye is, as often as not, an indication of enfeebled health. If they occur very frequently, some of the eyelashes may require to be eradicated. Try a course of pancreatised cod-liver oil emulsion as a strengthening medicine. Avoid over-use of the eyes, especially at night, and guard against chills. The following may be taken when the stye appears:—Tincture of pulsatilla, half-a-drachm; water, to make up four ounces. A teaspoonful every quarter-of-an-hour for the first hour, and one teaspoonful every hour thereafter.

G. Elliot.—You should certainly see a physician. Consult one of the Infirmary physicians in your city. It is evident that you suffer from some condition, which only a personal examination can detect. We think, at the same time, you are inclined to be morbid and over-anxious.

Juvenis.—1. Rest after food, and take a little Morson's "Pepsine" with the food. 2. Don't limit your meat-supply when your work is hard. Feed well, and don't under-nourish, as you are apparently doing.

Agricola.—See and follow advice to "W. S. Gould," Health, No. 40. For the pimples, take lime pills as follows:—Sulphide of lime, 2 grains; sugar of milk, 40 grains. Make into twenty pills—one to be taken every three hours.

A Sufferer.—Try, as a preliminary measure, the effect of the tonic ordered to "F. S." in the present number.

C. H. Johnson.—The leaflet sent is as unblushing a sample of quackery and nonsense as ever we have seen.

C. B.—Try the effect of taking 20 grains bromide of potass in a wineglassful of water about midday for a few days, and let us hear if what you complain of is thereby relieved. The affection may proceed from digestive troubles. Give a fuller account of your health.

Ninon.—The wash you name does not cleanse or clean the teeth—only a *powder* can do this. We recommend camphorated chalk or magnesia, as keeping the gums sweet and preventing tooth-decay. (See article on "Teeth" in No. 1 Health, and see also the papers "Our Useful Note-book" in Health, for various teeth-preparations.) 2. We know nothing of the action of benzoin as a cosmetic; but what we do know of it as a drug, prompts us to warn you against its use as applied to the skin. 3. For corns, avoid pressure of boots, and touch with caustic daily. 4. Yes,

[*Continued on page 272.*

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milk is good for the meals you name, taken some time (in the case of supper) before going to bed.

T. H.—1. Take the tonic recommended to "F. S." in present number of HEALTH. Use cold water sponging each morning, and live generously. Don't be morbid; you have a good chance of getting quite well. 2. Rest after food; take a little Pepsine with your food; and take a little "Æsculap" water, as a mild aperient, occasionally in the morning.

F. S.—No fee; all advice is given disinterestedly, and in the hope of doing good, either by simple recommendations, or by the opinion that a medical consultation is required. For your case we should, as a tonic, strongly advise you to take a teaspoonful of Fellows' "Syrup of the Hypophosphites" (before meals), in a wineglass of water, thrice daily. No; not precisely an abstainer, but certainly limiting yourself to a little good claret with your meals alone. The potass iodide was ordered by way of making sure that all your symptoms were treated. If you wish to see a reliable London physician we can send you address of such on receipt of stamped addressed envelope.

BUNDLE.—Try the following lotion as an outward application, and if not bettered, write again:—Soda bicarbonate, 1 drachm; glycerine 1½ oz.

TOLLER (or SOLLA?).—(Your cognomen is not clearly written.) You must have patience. Substitute for the solution ordered one of alum-and-water; or try bathing the hands in weak vinegar-and-water. As before, we repeat you must look to your general health.

A CONSTANT READER (will please use some more distinctive term in future).—You suffer from some digestive disturbance, but your note does not contain a sufficient account of your general health to enable us to decide specially on your ailment. Meanwhile there can be no harm in your trying the following:—Subnitrate of bismuth, 1 drachm; mucilage acaciæ, 6 oz. A tablespoonful every three hours. If not bettered, write more fully, and give an account of your previous health. The tonic recommended to "F. S." above will also do you good.

SENSITIVE.—There is no special remedy, except avoidance of chill and strict abstinence (not merely temperance) from alcoholic liquors. See that your food is nourishing; and take a little cod-liver oil through the winter as a nutrient and stimulant measure. These remedies may better your condition.

W. S. N.—Don't be morbid; and above all steer clear of quacks. You are quite well (save for the piles). Read and follow advice given to "J. R. (Glasgow)," in No. 39, and you will get quite well. For piles, read the advice given to "A Poor Man," in No. 37, HEALTH. There can be no objection to the step you mention, provided you get yourself into a robust state of health, by treatment advised above.

BETA.—Are you sure you have no kidney-complaint? In all such cases as yours, and which present your symptoms, we invariably advise a consultation with a qualified and experienced physician. The address of such an one we can send you, if desired, on receipt of a stamped addressed envelope.

R. B.—No; three miles altogether, and one mile altogether.

ONE WHO WAS CURED BY SALIVA.—Your interesting note is duly referred to elsewhere.

DOWN.—If you send a stamped addressed envelope, we shall be glad to put you in the way of getting a reliable opinion. You might try the tonic (for a time) above recommended to "F. S."

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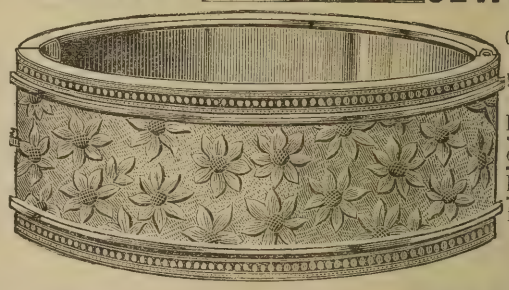

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 1, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The white elephant at the London Zoo' has been exciting attention of late among public and scientists; but the general result of the visit of the great pachyderm appears to be, on the whole, disappointing. Authorities in elephantine matters state that, so far from such an elephant being an uncommon sight, specimens exhibiting similar markings to those seen in the animal at present in the Zoo' are frequently met with in India. The elephant is not a white elephant at all, but merely one in which a deficiency of the ordinary skin-colour exists in certain parts of its body. A purely white elephant is an *albino* animal. The human race, as well as the familiar cats and rabbits, develop "albinos"; the ordinary colouring-matter in such forms being absent from hair, skin, and even from the eyes. White mice and white rats are also "albino" varieties of their respective species; and a curious fact has been noticed, namely, that albino-cats, with pink eyes, are usually deaf. Certain birds are also liable to produce albino-varieties of their species; and this tendency to variation in colour is, therefore, strongly marked in many groups of the animal world.

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Some curious cases have been recorded in which the tendency to "albinism" in man (Latin, *albus*, white) has been shown to be inherited and transmitted, sometimes from remote ancestors. In one case, two brothers married two sisters (their first cousins), no trace of "albinism" being present in any one of the four persons, nor any relation being an albino; yet, as Mr. Darwin tells us, the seven children born to these couples were all perfect "albinos." Mr. Darwin also placed on record the curious fact that albino-animals appear singularly liable to be attacked by insects. An albino-negro, contrary to the experience of his race, was seen to be peculiarly sensitive to insect-bites; and light cattle in the West Indies suffer from insect attentions, while their dark-coloured neighbours escape. Sir Erasmus Wilson tells us that while albinism is met with in every race, it is most common among races which have been subjected to unhealthy surroundings. It is said also to be more common in females than in males, and while in its general tendency it is a weakening condition; yet, instances are not wanting in which albinos have presented a high degree of bodily and mental vigour. In the development of local or general colour-variations, whether among men or elephants, we should recognise that we are really dealing with laws of variation, which, in their causation and extent, are at present practically unknown to us.

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Some time ago we referred in Health to the proposal of a medical man that life might be saved at sea by inflating the skin-tissues of animals with air, and by thus using them as buoyant supports to the shipwrecked. A new departure in this direction has been taken, it seems, by enterprising showmen. The fat ladies and gentlemen exhibited at fairs have always formed objects of interest to ordinary humanity; but the development of a fat man would seem to be an easier matter than has been generally supposed. We are now informed that a fat exhibit is produced by blowing air through a hollow needle into the skin-tissues, the distension thus produced giving to the subject of the operation the appearance of enormous stoutness. If this suggestion be correct the interest attaching to the fat men and women of the caravans will certainly decrease. Nothing is said regarding the injurious effects of the practice, but there can be no doubt that, in time, serious results might follow such an abnormal distension of the tissues.

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All fat subjects, however, and certainly many who have been exhibited, have by no means owed their size and weight to air and the showman's ingenuity combined. A list of the weights of undoubted fat persons reveals some astonishing details in respect of the abnormal extent to which the human frame is capable of being stretched. Daniel Lambert weighed 32 stone at 23 years of age, but even in that condition this portly person was able to enjoy a walk from Woolwich to London. Later on Lambert reached a maximum weight of 52 stone 11 lb. One Edward Wright weighed 44 stone; and in the case of one woman who died at 41, the heart weighed 36 ounces, and the liver 118 ounces; the usual weight of the female heart being 9 ounces, and of the liver 45 ounces. In America lately a young man's heart (normal weight 10 ounces) weighed 40 ounces. The subject in this case was 18 years of age.

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The modern dress hat, facetiously denominated by such familiar names as the "stove-pipe," and "chimney-pot," appears, like other items of dress, to be gradually attracting the notice of dress reformers. It is difficult to account for the popularity of the "tall hat" as an article of attire. Like most other things, it has passed through an evolution, the later stages in which have obscured, wholly or in greater part, the origin of the head-gear in question. Whatever its direct descent, from steeple-cowled Puritan, or from Cavalier-feathered and broad-brimmed hat, the modern style seems to have settled down amongst us as a stable article of attire. Without it no man regards himself as quite "dressed"; and even the opera-hat has been moulded, springs and all, into the same line of development. But with it, no mere man is quite comfortable. On the other hand, in windy weather, it is a nuisance; a shower of rain spoils it; at meetings and elsewhere, it is a kind of white elephant, and is liable to be damaged and ruffled, re-acting thuswise upon its owner's temper; while it is needlessly high, and, in respect of its want of ventilation, becomes insanitary in a high degree, as far as head and hair are concerned. "Who shall deliver us, then, from the 'stove-pipe' of to-day?" is a cry that has often been heard, but remains unanswered still.

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The popularity of the tall hat dates, in our opinion, simply from that sense of the "fitness of things" which arises from a long-continued and perpetuated association

of head and its gear. It would take years, doubtless, before we became accustomed to regard any other form of hat as the "correct thing" to wear. Yet when we visit other countries and mingle long with foreign nations, whose hats are of varied pattern from our own, we speedily become accustomed to the new surroundings, and cease to marvel at the difference, because the variation from our own type is the normal and natural style of dress. We shall doubtless follow the lead, in hats as in dress, of any enterprising persons in high places, who, in the future, may be bold enough to strike out a new line in head-gears. If any such change is being contemplated, we would desire to recommend the elegant John Knox cap, and the Leonardo da Vinci cap—both made of velvet, both neat in style, and both warm and convenient in every sense—as a suitable departure for the new evolution. But we shall not see the tall hat relegated to the region of the dodo, yet awhile.

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We beg to call the attention of our readers to the letter published in our present issue, and written by "One of our Contributors." The state of matters therein described is unfortunately anything but new. We are distinctly of opinion that our correspondent, in his own showing of the facts, has a very clear case against the builder of the house or the persons from whom he obtained his dwelling, guaranteed and certified to be sanitarily complete. A man who fails to connect house drains with the main, not only "scamps" his work, but, we should hold, actually leaves his contract uncompleted. As he must have charged for drain-laying on a scale which presumed the perfect discharge of his functions, it is clear he has pocketed money for which he has not given an equivalent in work. This is the plain business view of the matter. We say nothing of the health aspects of the question or of the morality of such a transaction. Our correspondent has a good case, we believe, if he elects to invoke a legal remedy. But what about the sanitary inspections and supervision of the building operations? Who is to inspect the inspectors?

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Apropos of the above case, we find that in the Glasgow Sheriff's Court, a householder lately obtained a verdict giving damages against a builder who had constructed drains in such a fashion that obnoxious gases escaped from them into the house, and caused the illness of the tenants. This is a step in the right direction. When householders appeal to the law for bare justice, it is unlikely that satisfaction will be refused them.

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Most readers have heard of the affection named "housemaid's knee." This is a malady affecting the knee-joint, and supposed to be produced through injury inflicted by the subject kneeling on hard floors. It affects the curious little pad or *bursa* connected with the knee-cap, and which is so interposed as to limit, like a pulley-wheel, the friction which takes place between the knee-cap and the adjacent structures in the movement of this joint. A curious observation has recently been made, regarding the occurrence of "housemaid's knee" in clergymen. A medical man writing to a contemporary, gives three cases in which clergymen consulted him for an affection of the knee which was found on examination to be connected with inflammation of the aforesaid "bursa." In each case, the affection was caused by kneeling at devotions, without the precaution being taken of having a cushion whereon to rest. The moral of this observation is clear, namely, that not only the clergy, but all other persons whose duties compel them to kneel on hard substances, should see that the knees are duly protected from injurious pressure.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE AGES AND CONJUGAL STATE OF THE PEOPLE.

Compiled from Vol. III. of the Census for 1881.

By Percy Russell.

One of the most interesting, instructive, and suggestive of the sections of the late Census returns is undoubtedly that relative to the ages of the people, and their condition as to marriage. The latter is generally held as a good criterion of the prosperity of the people, and most decidedly the former may be fairly taken as indicative of their condition as to health. The comparison, too, on both these heads with the corresponding returns for the year 1871 is of great value, serving as it does to show what progress, if any, has been made in the greater conservation of human life among us.

Taking ages first, it appears that with a total population of 25,974,439, including 13,334,537 females, in 1881, the number of males under 1 year was 341,434, and of females 342,978, against 344,742, and 342,148 for 1871. Under 5 years, in 1881, the males numbered 1,757,657; females, 1,763,207, against 1,536,464 and 1,534,812, the corresponding figures for 1871. Taking 20 years as the next standard point, we find that the males numbered in 1881, 1,112,354, and the females, 1,215,872, against 951,917 and 1,052,843, the corresponding figures for 1871. Advancing another decade to 30, the number of males in 1881 is stated to be 840,259, and females 905,210, against 746,320 and 813,675 for 1871. As we go on by leaps of 10 years, the numbers, of course, fall rapidly; thus, at 40 years of age, the males were in 1881 672,971, females 726,383, against 590,097 and 639,705 in 1871. At 50, the figures drop for males in 1881 to 485,758, and 536,317, and 455,788, and 488,901 in 1871. At 60, the males in 1881 numbered 340,555, females 387,067, against 294,675 and 328,010 in 1871. At 70, in 1881, males are returned at 158,333, and females at 191,622, against 149,887 and 1,740,086 in 1871.

Passing on to 80, in 1881, the males number 41,171 and the females 54,579, against 38,573 and 51,265 for 1871. At 85 for 1881, the numbers drop for males to 11,929, and for females, the latter always maintaining their greater tendency to longevity, to 18,058, against 11,685 and 17,896 in 1871. At 90 years of age we find a small band of veterans numbering in 1881—males 2,330, and females 4,460, against 2,383 and 4,338 for 1871. At 95 in 1881, the males are reduced to 359 and the females to 871, against 390 and 855 in 1871. Finally, at the age of 100 years and upwards, the males in 1881 are set down at 44, and the females at 97; against 41 males and 119 females in 1871. It is evident, for one thing, that the woman's chance of increased longivity augments as against the man's at all ages, and it is also clear that, consequent on this, the inequality in the number of sexes is greater at each succeeding decade. It will be found that if we take the children under one year it appears that in 1881 the males number 376,890 to 376,223 females showing the excess to be exactly the other way—viz., on the side of the males. The same remarkable fact is clearly brought out by an analysis of the returns for 1871, where we find under the age of one year that the males numbered 344,742, against 342,148 females. Now, when we come to

the age of two years, we find the proportion begins to change. Thus, in 1881, at that age, the number of boys was 351,616, against 352,793 girls. Thus early, although one might expect a different result, does the female begin to display her greater vital power. This is a subject which has not, perhaps, received sufficient practical attention among us; but it is decidedly one of very great interest and importance to the whole community.

Among what may be termed the curiosities of these returns, are the following:—Under the age of 15 years there are returned 1 prison officer, 3 scripture readers, 1 medical assistant, 22 members of the subordinate medical service, 84 lecturers and professors, 1 author, 10 painters, 3 engravers, 131 musicians, 12 art students, 37 photographers, and 84 actresses—for be it observed that the whole of the above mass of precocity is exclusively female. The number of domestic servants at this age we expect to be large, and find it accordingly to be 430,177, but we hardly looked to find 2 females described as brokers, and 130 as commercial clerks, and still less 3 more as pointsmen or level crossing men! There are 3 girls of this tender age down as carmen and carters, 32 as bargemen, 2 under the head of grooms, 18 under that of fishermen 2 under that of knacker, 27 under that of bookseller, 99 under that of cutlers, 87 under that of whipmaker, 10 under that of innkeeper, 148 under that of coal-miners, 15 under that of ironstone-miners, 28 as copper-miners, and 267 as working in tin. No less than 344 girls, all under 15, are employed in nail-making, 63 in anchor and chain, and 72 in other iron manufactures. Only three are returned as crossing-sweepers, but 54 are described as rag-gatherers, and 95—strange as sad—are tabulated as "general labourers!" There being at all ages no less than 2,893 thus designated. These are but a few samples of what is the melancholy side of these returns; but much more that is equally startling and socially significant may be easily gleaned from these tables, which set down everything good or bad with an inexorable precision.

Touching the condition of the people as to marriage, we find that of males, married at various ages, there are returned at the age of 15 years, 5,860; at 20, 245,466; at 25, 1,217,714; at 35, 1,170,779; at 45, 859,840; at 55, 562,693; and at 65 and upwards, 314,546. The widowed males at the same ages are, respectively, 98; 2,486; 26,474; 51,689; 73,928; 99,995; and 180,124. Regarding the females returned as married, the numbers were at 15, 32,416; at 20, 402,019; at 25, 1,343,802; at 35, 1,164,949; at 45, 810,420; at 55, 471,321; and over 65, 213,035. The widows at these ages were, respectively, 218; 4,852; 52,019; 124,089; 193,680; 251,811; and 372,377. In some cases it appears that a few persons, described as "married" were stated to be under 15 years of age, but all these have been classed with married persons aged 15 and under 20.

Such is the statistical summary of the conjugal condition of the people according to the census of 1881. If we revert to the corresponding returns for 1871, we shall obtain the following results. Married males at 15 years of age and under 20, 5,951; at 20, 219,197; at 25, 502,846; at 30, 559,537; at 35, 524,427; at 45, 426,872; at 55, 276,501; and at 65, 139,485. The number of wives at the corresponding ages were respectively, 34,573; 361,317; 584,733; 598,343; 536,598; 404,149; 236,979; and 104,110. The returns of 1871, which are in several respects on a different plan from those for 1881, enable us to ascertain the proportion of married persons to the utmost limits of age, and thence we note that at the age of 80, there were 14,392 husbands and 7,524 wives; at 90, only 509 of the former, and 221 of the latter; and at 100 and upwards, just 5 of each sex, while at this age the widowers were 31 to 103 widows.

Returning to the last census, it appears thence that taking all ages of males there were unmarried, 7,828,210; married, 4,376,898; and widowed, 434,794. As of these no less than 4,728,466 were under 15 years of age, it is obvious that a very large proportion indeed of males had entered into the married state. Turning to the female side of the account, we find 7,897,529 unmarried, 4,437,962 married, and 999,046 widowed. Of the unmarried, 4,740,125 were under 15 years of age. At the age of 25 years, however, the numbers of unmarried to married females were 576,103 to 1,343,802; at 35, these figures were, respectively, 233,820 to 1,164,949; and at 65 and upwards they were 67,670 unmarried to 213,035 married females. The males married to unmarried were at the same age 314,546 and 40,892.

One of the noteworthy features of these vital statistics is the great waste of life that must necessarily occur among male infants before the age of two years, and which is the cause of the great disparity in the numbers of the sexes at all succeeding ages.

Regarded as a whole, these returns are in themselves a treasury of valuable information, but it is surely a pity that in making up the figures more care was not taken to facilitate comparative reference to all the corresponding statistics for 1871.

STORIES OF SCIENCE AND CRIME.

FIFTH PAPER.

CASES OF FASTING AND STARVATION (*continued*).

Many cases of "fasting" occur in the history of hysterical girls, who, through some freaks of a disordered imagination, either fast in reality, or make pretence of abstaining from food. Such cases, through a natural process of development, either become elevated into veritable miracles and wonders, or are made sources of pecuniary gain and profit by interested relatives or others. Louise Lateau, whose case has been fully described in Health (see No. 23, page 356), for example, was alleged to have taken no food for twenty months—and, in this instance, a hysterical girl was regarded as a veritable saint, and was esteemed a person living under Divine care of a special order, and as having evinced marks and signs of equally mysterious and supernatural kind. In the case of Louise Lateau the evidence presented of her fasting is of a kind likely to satisfy no independent observer. Again, in cases of another kind, in which the subjects are hysterical girls as before, the parents or friends are often tempted to make an exhibition of their so-called "fasting powers." Here, the patients may abstain from all food (excepting water) for a time, or, when imposture enters into the case, they may be secretly fed. It is a well-known medical fact that the hysteric type of mind is precisely that which most readily lends itself to deception and fraud.

In considering cases of starvation, one prominent fact requires to be carefully kept in view. It should be borne in mind that *on water alone*, a human being can subsist for many days—losing weight and substance, no doubt, as the days pass, but still retaining his vitality, and capable of warding off the approach of death for a period

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

varying with the state of the body, age, health, and other conditions. It may be said that water is the only food which is capable, of itself, and in the absence of all other forms of nourishment, of sustaining life for lengthened periods. The reason why water thus appears to pass into the first rank of foods, is not difficult to discover. Our bodies largely consist of water; it enters into the composition of every tissue and of every fluid; it is continually being excreted or given off in the processes of waste which attend life, and it is demanded for the solution of the solid parts of the food, and in other important bodily operations. Water is thus a highly essential constituent of the bodies of animals and plants. Physiological statistics place the importance of water very forcibly before us. It forms more than two-thirds of the whole weight of a man's body, and its amount in the various tissues and fluids is shown in the following table :—

Quantity of Water in 1,000 Parts of the Following Tissues and Fluids.

Teeth	100	Milk	887
Bones	130	Pancreatic Juice (Sweetbread)	900
Cartilage or Gristle	550	Lymph	960
Muscles	750	Gastric Juice (Stomach)	975
Ligaments	768	Perspiration	986
Brain	789	Saliva (Mouth)	995
Blood	795		
Bile	880		

Forming as it does such an important element in the bodily composition, it is not surprising to find that while the other constituents of the body disappear under the influence of starvation, a supply of water enables us to hold out against death for a longer or shorter period. All cases of prolonged fasting have depended on water as their means of support. We see the high importance of water if we compare cases of starvation in which no water was to be had, with those in which water was supplied. Horses can last only five days on an average in the absence of solid food and water, but on water alone they can live for twenty-five days. In man, death occurs in from six to ten days when a total want of solids and water is experienced, while on water alone, as we shall hereafter note, human life is capable of being greatly prolonged. Dr. Tidy has summed up in his recent manual of medical jurisprudence, the periods at which death occurred in cases of starvation, without, however, taking into account access to water. Four of these cases occurred from the seventh to the tenth day. Of these four cases, one was that of the "Welsh Fasting Girl" already noted. Another case was that of a Captain Gairdner, who figured amongst the Patagonian missionaries of 1851, and who left a diary, in which he described his sensations. After being nearly sixteen weeks with an insufficient supply of food, the Captain lived for six or seven days without any food at all, and died on the day of the last entry in his diary. In other cases death has occurred between the eleventh and eighteenth days of fasting; between the eighteenth and thirtieth days; and between the thirty-first and fortieth, forty-first and fiftieth, and fifty-first and sixtieth days respectively. Reference will be made hereafter to special cases included in the foregoing statistics.

Cases of *recovery* from starvation became highly interesting, especially in view of the fact that, provided with even a moderate amount of water, life may be preserved for an astonishing period. Eight men and a boy were enclosed for eight days in a coal-mine, and were ultimately rescued alive; and the miners at Tynwydd lived nine days in a chamber amid *compressed* air without solid food, but with plenty of water, recovery taking place after the rescue. A boy of fifteen years of age bore his imprisonment as hardily as the men. In another case, a miner was detained in a pit for twelve days without food, but with plenty of water. The atmosphere in which the man was imprisoned was highly impure. On being rescued he was found to be much emaciated, and his pulse, besides being feeble, stood at 112 per minute. He recovered after some weeks' attention. On the fourth day after his rescue he was found to weigh 28 lb. less than his normal weight. Some workmen, who were dug out alive from a vault which had collapsed, lived fourteen days on water alone; and a case is reported by Dr. Sloan, of Ayr, in which a man aged 65, of spare build, was taken out alive from a coal-mine in which he had been imprisoned for twenty-three days. For the first few days he had drunk water containing a large quantity of iron, but after this, becoming weak and unable to move, he lay down at some distance from the source of water-supply.

Mauthner on the Influence of the Electric Light on the Human Eye.—In discussing the value of any particular source of artificial light, says Professor Mauthner (*Wien. Allgem. Med. Zeit.*, No. 10, 1883), three qualities must be especially regarded :—1. The steadiness of the light; 2, the strength of the light; 3, its composition. From its complete failure in point of steadiness, the arc light must be at once rejected from the category of lights suitable for the human eye. The incandescent lamp, on the other hand, deserves a prominent—if not a leading—position. As regards its strength or intensity, also, it fulfils all requirements, since it can be modified or intensified at will. The composition of the lights habitually used hitherto has shown a preponderance of yellow rays. In the electric light, however, the short-wave rays predominate—*i.e.*, the violet rays. To the human retina, blue or violet tints are more agreeable than yellow, and hence from its composition, as well as from its steadiness and adaptability, the light of the incandescent lamp is especially adapted for the use of the human eye. Distinctness of vision and the perception of colour are both increased under the electric light—facts which might be theoretically held to involve an overstrained retina. Such a theory is not, however, borne out by practical experience; it is only where the light employed is unsteady that any ill effects have been observed. It may be considered as an established axiom, that the brilliancy and composition of any light are as nothing, in respect of its value as an illuminating medium for ordinary uses, compared with its constancy and steadiness. In the incandescent lamp no combustion takes place, and hence no consumption or vitiation of atmospheric air is induced. From a theoretic point of view, therefore, no objection can be raised against the use of the incandescent electric lamp; its full value as an illuminator is probably not yet ascertained.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

BEAUTY-CULTURE.

By Philip Foster, M.D.

PART FIRST.

"Beauty itself doth of itself persuade
The eyes of men without an orator."—*Shakespere.*

Beauty, the time-immemorial theme of poet, painter, and sculptor, always has been, and, as long as the human heart continues to throb with its present passions and emotions, must remain the most valued of possessions. I say "possessions," for all, or nearly all, the elements that constitute it—a finely-moulded form, elastic step, clear complexion, bright and sparkling eyes, ruby lips, chiselled features, and, last, but not least, expression, while to some extent natural gifts, are in a great degree the result of physical and mental cultivation. Paints, powders, and washes, the relics of a barbarous age, are powerless for good, although not for evil; and only by training the body and mind can our object be secured. The true art of beauty-culture, then, consists in improving the health and in developing and regulating the mind. While neither questioning or admitting the dictum that "beauty is, when unadorn'd, adorn'd the most," it must be conceded that clothes may be becoming or unbecoming, and, consequently, dress will have to be briefly considered.

"Personal health" cannot be too frequently brought before the reader; and therefore, although the subject is being discussed in these columns, I shall offer no apology for the following suggestions. The influence of pure air in the promotion of health and prevention of disease is too well known to need enforcement here. Some part of every day should be spent out of doors, as open and healthy a neighbourhood as possible selected to live in, and the house effectually drained and ventilated.

For efficient drainage, the pipes, especially at their joints, must be free from leakage; the main drain, which should not be more than six inches in diameter, must communicate with the common sewer, be properly trapped after it has left the house, and ventilated between the trap and the house, so that any sewer-gas that may find its way through the trap may escape without entering the house; the pipes must be kept free from obstruction, and be easily accessible. The pipe for ventilating the main drain should be three inches in diameter, should join the drain as it issues from the house, and pass up the front of the house quite to the roof. Freedom from obstruction will best be secured by the pipes having a steady fall, being free from sharp turnings, and frequently flushed. Grease, a frequent cause of obstruction, may be got rid of by pouring down the sink occasionally—say once a month—a pound of washing soda dissolved in two gallons of boiling water.

The great objection, common until lately, to all methods of ventilation, has been the production of draughts. This may, however, be overcome by making the air enter the room in an upward direction. The simplest mode of effecting this is to raise the lower sash of the window two or three inches, and have a piece of wood exactly fitted into the vacant space at the bottom. A perpendicular passage for the air is thus formed between the upper part of the lower and the lower part of the upper sash. The foul air is best got rid of by making an opening into the chimney near the ceiling. More consecutive hours are passed in our bedrooms than in any other part of the house, and consequently they should be large, and the ventilation as perfect as possible. I am convinced that small, crowded, and imperfectly ventilated bedrooms are a fruitful source of debility and disease.

How much sleep does nature require? The fact is that some persons need more than others. When we wake of our own accord, that is, without having been disturbed by anything, we have had enough sleep, and shall be better up. The Iron Duke used to say, "When it is time to turn over, it is time to turn out." How much sleep is required in our own case can easily be ascertained by going to bed every night at a certain hour for two or three weeks, noting the hour at which we wake every morning, adding the hours together, and dividing the sum total by the number of nights. The sleep obtained before midnight has been termed "beauty sleep," and the reasons why "early to bed and early to rise" should conduce to health, and so to beauty, are not far to seek; for sleep is sounder in the early night, when all is dark and quiet, sunlight most refreshing and invigorating, and the atmosphere created by all artificial lights (the electric excepted) extremely unwholesome.

There is an old saying that "every one knows his own stomach best," and therefore I think I shall not be acting unwisely in leaving the selection of food to individual taste and experience, simply stipulating that it be frequently varied, moderate in amount, well cooked, not too highly seasoned, and eaten slowly. Corpulence, so destructive to grace and elegance, arises from there being in the system a surplus of fat-forming material, with a deficiency of power, by a more complete process of oxygenation, to change it into products which can be carried off through the secretions, and consequently the best means of reduction and prevention will be to limit the supply of this material and increase the power by which its elimination is effected. The first object may be attained by extreme moderation in eating and drinking, being especially sparing in the use of, without entirely abstaining from, those articles of diet which particularly favour its production. The principal fat generators are—fat, butter, oil, sugar, arrowroot, sago, tapioca, rice, potatoes, carrots, turnips, parsnips, sea-kale, pastry, puddings, cocoa, ale, porter, sweet wines, and liqueurs. A good practical rule is to avoid butter at breakfast, bread at dinner, to eat fat sparingly, green vegetables in preference to potatoes, and to give up entirely sugar, pastry, ale, porter, and sweet wines. Plenty of exercise in the open air, by supplying the body well with oxygen and increasing the secretions, and keeping the body cool will fulfil the second object. Melted butter, hot buttered toast, pastry, and all dishes of which melted butter forms a constituent are considered, and I think with good reason, to have a prejudicial effect upon the stomach, and through it upon the complexion. Alcohol, if indulged in at all, must be taken in extreme moderation.*

Constipation is in many ways prejudicial to good looks, and, should partaking freely of the whole-meal

* "I am in accordance with high authority in fixing this at one ounce a day; as proof spirit contains only about 48 per cent. of alcohol and ordinary spirit is below proof, this may be roughly estimated at about two ounces, or an ordinary wineglassful; two glasses of good beer; half a pint of light wine, such as claret; a quarter of a pint of sherry, or rather less of port."—"Alcohol; its Nature and Action." By Philip Foster, M.D.

bread, fresh vegetables, and fruit fail to remedy it, purgatives, which only give temporary relief, must not be resorted to, but medical assistance obtained, with the object of having the intestinal tone restored. I am glad to see that the Adulteration Acts are being stringently enforced, for unless our food be pure and wholesome it is impossible that our health can be good. We can also do much to protect ourselves by favouring food which reaches us in its natural state, and by buying articles which have to pass through the manufacturers' hands only from noted makers, and such as give a sufficient guarantee of the genuineness of their productions.

Exercise should never be carried beyond fatigue, for when fatigue commences the beneficial effects of exercise cease, and it does positive injury. Persons who undergo severe mental strain should be careful about taking exercise after such strain. When the nervous system is fatigued, much physical exertion is improper—is, indeed, attended with grave risk, for the various parts of the system are so intimately associated, so dependent one upon another, that when any part is really exhausted, the others cannot be worked with safety, let alone benefit. Those who have passed their meridian should bear in mind that their days of reserve energy have also passed, and take life easily, avoiding, as much as possible, all strain and effort, whether mental or physical, as their vital powers can no longer be relied upon for meeting heavy and unusual demands.

I must not pass on without a strong recommendation of athletics, for only by a regular course of these exercises can every part of the body be thoroughly developed; but they must be approached gradually and not carried too far, lest injury be done to some vital part, such as the heart, by overstrain. Were girls thoroughly developed physically, the sad spectacle of women broken down and permanently invalided by the discharge of their natural duties would not be so common. Persons who lead inactive lives at home should carefully avoid any violent or prolonged exertion when away. A week or two spent quietly amidst pure air and changed scenes will recruit without overtaxing their strength, and such persons would do well to leave walking tours and mountain climbing to those whom habit and previous training have rendered equal to the strain. Much of the benefit derived from going away is due to the change and freedom from home worries, and as the body is greatly influenced by the mind, and pleasure one of the best tonics, preference should be given to places where our time can be agreeably passed.

Removal of a Leech from the Organ of Voice.—Professor de la Sota y Lastra reports in the *Revista Médica de Sevilla* (November) the case of a man, aged sixty-four, who was admitted into the hospital of Seville on Aug. 3, 1883. Five days previously, while working in the fields, and sweating, he drank some cold water, and a few hours afterwards spat some blood. Swallowing and breathing became difficult, and sleep was disturbed by attacks of suffocation. Swallowing a leech is not an infrequent occurrence amongst drinkers at Andalusian streams; but the rapidity with which blood trickles from the mouth and the feeling in the throat usually point to the cause of mischief. It was not suspected in the present case, as some hours had elapsed before any blood appeared, and the patient had a family history of consumption. After physical exploration of the chest, the Professor made an examination of the throat, which led to the detection of a leech within the organ of voice. Extraction of the worm with a pair of forceps gave immediate and complete relief.

Our Papers on Popular Science.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

OUR HEARING POWERS.

SECOND PAPER.

By E. H. Riches, LL.D., F.R.A.S.

As musical sounds proceed from uniform vibrations occurring at equal intervals, so a sound which is nothing but what we understand as *noise* is occasioned by *irregular impulses* communicated to the ear. Thus the musical sound is produced when the impulses and the undulations of the air are all exactly similar in intensity and duration, and recur after exactly equal intervals of time. Now, if the sound-impulses be quickly repeated, they do not strike the tympanum of the ear so as to produce separate sounds, but one continual uniform sound is the result, and this is called tone or pitch, the impulses being similar and at equal intervals. And it may be remembered that when the impulses are many in a given time the tone is called *sharp*, and when few the tone is called *grave*. The sharp tone is generally a loud sound, because the quick vibrations required to produce the sharp tone result from quick impulses.

The sensibility of the auditory nerves in different individuals varies, and it follows that the same sounds are not heard by every one with the same degree of intensity; the range, however, of human hearing includes about nine octaves. It has been ascertained in order that a sound may be perceived by the human ear, which is produced by a vibrating chord, there must not be less than thirty-two vibrations a second. It is stated, however, that when a chord gives eight single vibrations in a second, a sound that is perceptible is produced; at the same time it is interesting to remember that the human ear is capable of appreciating as many as twenty-four thousand vibrations in a second of time, and thus is able to hear a sound which lasts but the twenty-four thousandth part of a second, but, owing to the peculiar and wonderful construction of the human ear, it is not capable of hearing sounds which really occur in nature where a greater number of vibrations per second occurs. And may we not reflect here on the fact that, in our present state of existence, the ear, as also our other organs of sense, although evidently constructed with capabilities for greater things, are, as it were, in a state of abeyance, and this too for an all-wise and beneficent purpose? All the various functions of our physical and mental being, too, although capable of that action which would render us (what in our present phase of existence is an impossibility), a complete state of health, will undoubtedly in the wise dispensation of things at a time appointed by, and known only to, our Maker, be allowed their free course, when not only things which "eye hath not seen," and sounds which "ear hath not heard," but an existence which in its perfection is far beyond our present finite idea, is reserved for the human life. And if these capabilities

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exist within our frame, and as a perfect state of health was originally intended to be ours when man was first created, it is no waste of time surely to endeavour to comprehend, as far as our opportunities permit, at least those portions of natural and physical science which have mutual bearing upon a proper understanding of those laws which govern health. But to proceed. It has been observed that when one of several sonorous bodies near each other, tuned to one accord, is thrown into a state of vibration, all the others near it, capable of producing the same tone, will vibrate also; it is commonly observed, too, that a weak sound is generally drowned by a loud one, and the reason is this—when one body is made to produce a certain note, its soniferous vibrations will always be checked or interrupted by the emission of a more powerful or discordant sound near it. In the case of musical-stringed instruments very much depends upon the body of the instrument which supports the strings; we have instances, of course, of this in the case of valuable violins made by the famous old Italian makers, for be it observed that the vibrations produced by the strings of the instrument are communicated to the matter composing the body of the instrument and the surrounding air thus producing, as was before explained, an audible sound. Now, it is a fact worth noting that, of all animals, the bird alone always produces musical notes, and the reason may be explained thus: that it alone possesses *a vocal organisation*, in consequence of the larynx being in its case separated, as it were, into two parts, one placed at each extremity of the windpipe; while in other animals it is placed wholly at the upper end of the windpipe. The voices of birds, varying, as they do, according to their species, produce a sound of whistling or warbling, rather than of singing, for it is only the human voice which may be said properly to sing, as it is only man who has the power of uttering articulate sounds. And we may here mention that, in the human system the parts concerned in the production of speech are the windpipe, the larynx, and the glottis, and it is well that a somewhat clear idea of each of these parts be formed. The windpipe is simply a cartilaginous canal, through which the air issues from the lungs; the larynx is an enlarged continuation of the windpipe, formed, like it, of cartilage or gristle, membrane, and muscle. It is, however, more complicated, terminating above in two lateral membranes, which approach near each other, leaving an oblong, narrow opening, which is called the glottis. Now, the air expired from the lungs passes through the windpipe, and out at the larynx, through the opening of the membrane called the glottis, and it is the vibrations of these membranes caused by the passage of air which produces sound; and by varying the *tension* of these membranes and the size of the opening (which we are capable of doing) the sound issuing may be made acute or grave.

The force exerted by a healthy chest in blowing is about one pound on the inch of surface; or, in other words, the chest can condense its contained air with that force, and can, therefore, blow through a tube, the mouth of which is 10 feet under the surface of water. When we make an effort to lift a weight we *compress* our breath, that is, we shut up the air in our lungs in order that our body may have greater steadiness and firmness. It has been admitted that not only the healthiness of the lungs, but a general well-being of the system, may be largely regulated by a proper understanding of the mode of not only producing sound, but of articulating that sound with the lips, tongue, and teeth. A careless utterance, if persisted in, may in time sadly deteriorate the condition of those organs which in their union of function produce sound, and without doubt, where the tongue, lips, and mouth be properly managed with care in articulating sound, a general healthiness of tone is often an accompaniment, and even the saliva produced thereby in its proper quantity passes into the stomach, where it has its necessary uses. Saliva, too, has its use while in the mouth, by changing the starchy matters of the food into a chemical sugar, before passing into the stomach. In the case of *bread*, which contains starch, for instance, saliva is necessary to render it fit for digestion. But flesh food is capable of being swallowed without this previous admixture of saliva. We see this fact exemplified even in the case of a dog, which will swallow at once a piece of meat, but a piece of bread or biscuit it *can* only swallow *after* it has been duly prepared by saliva in the mouth, and is so rendered fit for reception by the digestive organs.

The Weather and the Public Health in 1883.—In view of the satisfactory condition of the public health in 1883, judged by the national death-rate, which so far as is at present known did not exceed the low rate of 19·5 per 1,000, it is interesting to consider one or two of the principal meteorological features of the year derived from daily observations at the Royal Observatory, Greenwich. The mean temperature of the year was 49·3°, against 48·9° and 49·7° in 1881 and 1882, and was 0·8° above the average mean in 100 years. Compared with the same mean standard February was exceptionally mild, and March as exceptionally bleak and cold. The mean temperature of August showed an excess. With these exceptions the monthly mean temperatures differed but slightly from the averages. The only marked effects produced by the temperature was a considerable temporary increase of mortality due to the cold March, which more than balanced the favourable effect of the mild February, and a sudden increase of infantile diarrhœa fatality, due to the excess of temperature in August. The temperature of each of the last four months of the year being slightly above the respective average, undoubtedly conduced to the low mortality of the last quarter of the year. Rain was measured at Greenwich, on 173 days in 1883, to the aggregate amount of 21·9 in., showing a deficiency of 3·4 in., compared with the average amount in sixty-one years. The deficiency of rainfall was most marked in March, August, and December; whereas the months showing the largest excess were February and September. The amount of bright sunshine recorded in the year was 1,241 hours, differing but slightly from the amount in each of the five preceding years, excepting only 1879, when the amount fell to 983 hours. The sunshine exceeded the average in August, but showed a marked deficiency in December. The weather in 1883 was, on the whole, fairly favourable to health, being free from severe frost in winter and from excessive summer heat. It is, however, mainly to other causes that we must look for an explanation of the low death-rate of the year.—*Lancet.*

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HOW TO MAKE A POULTICE.

We cull the following remarks on an all-important family and medical topic from the *Practitioner* :—

At first sight the title of this paper may seem to many of our readers absurd, and the idea that medical men require any instruction in making a poultice preposterous, but we have been led to write it from seeing that many students and some practitioners do not distinguish between the proper methods of making a poultice for surgical and for medical use. Many, perhaps most, students spend a great part of their four years' curriculum in surgical study, and devote a comparatively small portion of it to medicine. This may partly be the reason why they do not learn the best ways of making poultices for the relief of internal pain; but another reason is, that in hospitals poultices are made in certain ways for the sake of cleanliness and economy, and these ways are not always the best possible for private patients, although they may be the best under the conditions which obtain in hospitals. Every one knows the relief which a poultice affords when the finger is inflamed, and has noticed how the painful throbbing diminishes after its application. Most people have noticed also that dipping the finger in cold water has a similar action, and it seems strange to many that the opposite conditions of heat and cold should have a similar effect. The reason probably is that both heat and cold lessen the force of the impulse with which the blood is driven through the dilated arteries of the inflamed parts against the block which exists in the capillaries (or smallest blood-vessels). Cold causes the afferent arteries (or those carrying blood to the body) to contract, and lessens the impact of the blood by diminishing the quantity sent to the inflamed part; a poultice lessens the impact by dilating the capillaries surrounding the seat of inflammation and affording a ready side outlet into the veins. In surgical cases we usually use the warmth and moisture of the poultice to act directly on the surface. We therefore make the poultice with crushed linseed or with linseed meal and oil, spread it on some tow and apply it to the skin without anything intervening. But useful though this method may be for wounds, ulcers, and abscesses, it is not the best form of application in cases of inflammation of the thoracic or abdominal organs, or where spasm is present without inflammation. In such cases we may, no doubt, do some good by applying the poultice to the surface exactly as in surgical diseases. We may draw off some of the blood to the surface; and we may also exercise a reflex action through the nerves upon the vessels of the inflamed organ below; but this will not be so great if we influence the surface only, as when we allow the heat to penetrate to the inflamed or irritated organs themselves. If we apply the poultice directly to the skin, it must be allowed to become tolerably cool before the patient can bear it, and thus half its advantage is lost. In order to relieve spasm, as in colic—intestinal, biliary, or renal; to relieve inflammation of the pleura (lining membrane of the chest), the lungs, the liver, or other organs, we want to apply the poultice as hot as possible, while we protect the skin from being scalded.

In order to do this, a flannel bag should be prepared, a convenient size being twelve inches by eight; this should be closed at three edges and open at the fourth; one side of it should be about one inch or one inch and a half longer than the other, and it is convenient also to have four tapes attached at the points which form the corners when the bag is closed, in order to keep the poultice in position. Besides this, another strip of flannel should be prepared of the same breadth as the length of the bag, and long enough to wrap round it once or oftener. Crushed linseed, bowl, and spoon should then be got together, and the spoon and bowl thoroughly heated by means of boiling water; the poultice should then be made with perfectly boiling water, and rather soft. As soon as it is ready, it should be poured into the bag, previously warmed by holding it before the fire; the flap which is formed by the longest side of the bag should now be turned down and fastened in its place by a few long stitches with a needle and thread; it should then be quickly wrapped in the strip of flannel (also previously warmed), and fastened *in situ*, if necessary, by means of the tapes. It may be covered outside with a sheet of cotton wool. In this way the poultice may be applied boiling hot to the skin without burning; the two layers of flannel which are at first dry allow the heat to pass very gradually indeed to the skin; as the moisture of the poultice soaks through them they become better conductors, and the heat passes more quickly, but the increase is so gradual as not to cause any painful sensations whatever, but only one of soothing and comfort. The poultice also naturally keeps much longer hot, and the necessity for changing it arises much less frequently.

The difference between the effect of a poultice made in the ordinary way and in the manner just described is sometimes exceedingly striking. It is, perhaps, less marked in cases of inflammation than in those of spasm. We have seen a patient suffering from intense abdominal pain at once relieved by a poultice made in the way just described, although a succession of poultices made in the ordinary way had been utterly useless. This way of making poultices is one of the minutiæ of medical practice; apparently extremely trivial, but really, we believe, very important. The relief which we have seen afforded by poultices made in this way, and the knowledge that *some* practitioners at least are ignorant of the method, must be our apology for drawing attention to such a trivial detail.

Peroxide of Hydrogen as a Bleacher.—"Oxygenated water," a common name for peroxide of hydrogen, has within the last few years attracted a good deal of attention as a bleaching and purifying agent, and has been successfully employed as a substitute for chlorine. It is this substance which is used in Dr. Carter Moffat's voice-culture experiments. It is now stated that Mr. P. Ebell, of Pfungstadt, near Darmstadt, has succeeded in preparing economically a product, pure, stable, and of constant strength, capable of being easily transported for long distances, and kept for years without losing its bleaching properties. Among other applications of this product, that of the decolouration of animal fibres is the most important, as it does not contain some of the disadvantages of other bleaching agents. For wool or silk, it is advisable, before bleaching, to cleanse the materials thoroughly, so as to eliminate all the greasy substances and impurities. For this purpose, Mr. Ebell recommends a bath in a solution of five parts carbonate of ammonia to one hundred of water, this bath being followed by a soaping, and thorough washing with water. The bleaching itself is performed either by immersing the materials in the solution of oxygenated water, and leaving them there at a temperature of from 20 deg. to 30 deg. C., until the decolouration is complete, or the materials are impregnated, when they are wrung out and exposed in a room heated to about 20 deg. C. They are then left to dry.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION AND HEALTH.

By B. H. Thwaites, F.C.S., A.M. Inst. C.E., &c.

SIXTH PAPER.—EARTH-CLOSETS.

In small towns, villages, and country residences, where the sewerage system and water-supply arrangements are such as not to permit the use of the more convenient water-closet, earth-closets may be used most advantageously. If properly constructed and attended to, they possess advantages particularly valuable in rural or agricultural districts; indeed, if the earth-closet system was more generally adopted, and the manure therefrom fully utilised, we should not require to ransack the most distant parts of the globe for guano, phosphates, alkalies, &c., for the fertilisation of our land.

In return for the value of the manure added to it by the human excretions, the dry earth acts as a deodoriser and disinfectant, destroying all obnoxious effluvia, and absorbing all noxious vapours. Moreover, the earth-closet cannot propagate infectious diseases, which may occur at a distant quarter from the place on which it is situated. The water-closet, if badly arranged, and if connected with imperfect sewerage arrangements, is liable to do this.

The earth-closet is not subject to the effects of frost, and is not liable to get out of order by improper substances being thrown into it.

In the earth-closet everything can be seen, and it requires no pipes and traps, which, if imperfect, may become the means of spreading disease and death.

The disadvantages of the earth-closet in comparison with the water-closet are the necessity of a constant and regular supply and removal of the earth. If these conditions are not stringently adhered to the earth-closets become both disgusting and dangerous to health. Moreover, the work of renewal and removal of the earth cannot be properly carried out without some supervision; it is liable to produce much dirt and inconvenience; it is a not very desirable addition to household labour, and as such will be evaded whenever possible.

If properly looked after, however, it should produce far less effluvia than a water-closet, and the value of the manure should almost pay for its removal. The average value set upon each person's excretions is 10s. a year; the value per ton of the manure from earth-closets is estimated, when dry, at from £2 to £3. The manurial value of this earth will be understood from the following.

To a quarter of an acre of sweet turnips there was applied one hundredweight of earth manure, which had passed five times through the closet. To three quarters of the same acre there was applied three hundredweight of superphosphate (at that time worth £7. 10s. per ton). The turnips grown on the one quarter of an acre, dressed with earth manure, weighed one-third more than those grown on either of the other quarters of an acre, dressed with superphosphate. The whole crop was fed off. No other manure was used, and the following year the barley crop was finer on the one quarter of an acre than on either of the other quarters of an acre, in proportion of four to three.

To insure the proper working of earth closets, arrangements should be made with some dealer of manurial agents or farmers, for the constant renewal and removal of the earth. The same earth can be used several times over, without producing any offensive smell. In fact, it has been used as many as twelve times, without proving in any way offensive.

The description of earth proved to be the most satisfactory as a deodorant and disinfectant is that of a loamy nature, perfectly dry, and finely sifted. Gritty earth or sand are useless, equally as absorbents, deodorants, or disinfectants. It is not necessary that the earth should be dried by means of artificial heat; the best plan is to have a sufficient quantity stored in summer to last for winter. When this is inconvenient, as in the instance of a small family, the earth can be dried on the hearth of the kitchen range, and afterwards sifted. A single person will require about 20 lb. of dried earth per week, or a family of six, one cwt. per week.

The earth as soon as removed from the closet, after having done service, should be laid under cover for a period of six weeks, and it may then be applied to the land as manure, or, if perfectly dry, be again used in the closet.

When it is found impossible to obtain earth in sufficient quantities, the sifted ashes resulting from an ordinary coal fire can be used in its place. One principle of applying the earth to the excrement is necessary for proper success of the earth closet system, viz., the earth should be applied in a small and definite quantity each time the closet is used, and not in a large quantity for several times use. The foremost pioneer of the earth-closet system is undoubtedly the Rev. Henry Moule; and the closets bearing his name may be found in almost every part of the globe.

Moule's earth-closets are generally arranged and constructed as follows:—The earth, or other deodorant, is contained in a specially-devised hopper, and is thrown on to the excreta in certain definite quantities, either by the action of a pull-up handle (similar to that of a water-closet), or automatically by the weight of the user on a balanced seat or footboard, or both combined. The Girdleston patent closet is an improvement on that of Mr. Moule's. In this instance, the closet is so arranged that its user observes nothing beneath the seat but an earthenware rim and a layer of dry earth. This latter resting on a valve fixed beneath the rim, effectually conceals the contents of the receptacle. On the handle in the seat being raised, the soil on the valve is upset into the receptacle; and, when the handle is returned to its normal position, a fresh charge of earth is spread over the valve in readiness for the next user of the closet, the valve at the same time preventing almost all upward draught.

Various attempts have been made to separate the solid from the liquid dejections, and amongst them is that of Dr. Bond. The receptacle in this closet is constructed so as to receive the liquids and solids in separate compartments. A box for the supply of the deodorising material (dry earth or sifted ashes) is attached to the lid of the seat. The user of the closet, in lifting this lid, simultaneously measures out a charge of the deodorant; on the user again closing the lid the deodorant is discharged on to the solid excreta.

In Moser's "Universal Closet," the deodorant (stored in a chamber at the back of the seat) is spread over the dejections in certain definite quantities, by the presence of air from a pair of bellows which are actuated by an ordinary pull-up handle. By means of a simple plate, or guard, fixed across the receptacle; fluid is diverted into an independent vessel containing some absorbent material.

Somewhat similar to Moule's closet is that of Gibson, which consists of a movable shoot attached to a hopper and arranged to receive a small quantity of deodorant, which is distributed on to the dejections by means of a shovel action arrangement.

A stand-pipe with a funnel-mouth receives the fluid excretion, and conveys it direct to the drain without mingling it

with the solid dejections. In some of the manufacturing districts of the West Riding of Yorkshire the division of the liquid from the solid discharges is an important quality, as the former is used in some of the manufacturing processes; but when the manure from the earth-closet is used merely for agricultural purposes, it is of very little importance whether the solid and liquid dejections are separated or not. Of course, this separation will reduce the quantity of earth required for the closet by at least 30 per cent. It will be seen by the reader that the development of the earth-closet system has received the assistance of numerous ingenious inventors; but the remarks applied in reference to the water-closet mechanical arrangements are equally applicable to the earth-closet—*ergo*, the simpler and stronger their construction is the better. Where the authorities institute and provide a staff of workmen to regularly supply and remove the earth from the closets, the earth-closet system (in view of the great manurial value of the refuse earth) is the *ne plus ultra* system for agricultural towns and districts.

Deficient Air-Space in Work-Rooms.—Judging from recent proceedings taken under the Factories Acts, there would seem to be reason to fear that manufacturers employing a larger number of workpeople than they have space to accommodate, crowd their rooms in a fashion regardless of health, and are let off easily on promise of amendment when actually charged before a magistrate for the statutable offence. This is much to be regretted, because it ought to be assumed that the law which requires a specified amount of air-space for each person confined in a work-room has been enacted in the interests of public health. It is lamentable when individual members of the community show unwillingness to do or suffer anything for the general good. In this matter affecting the health of work-people in factories and work-rooms, it is especially necessary that there should be a cordial endeavour on the part of employers generally to treat the Act of Parliament and the regulations that have been issued under its authority as a code of directions for health preservation, and instead of evading the law to obey it in the spirit as well as in the letter. A little more loyalty to the commonwealth would be a gracious proof of patriotism and good fellowship on the part of some of our respected fellow-subjects.—*Lancet.*

Man's Place in Nature.—One hears now and then the assertion that man is not the highest animal. In proof of this assertion, it is urged that this animal is far more specialised in one direction, and that animal in another. Mr. Lockington takes the ground that specialisation is not in itself any proof of advance. Now, the real progress is not to be sought in the specialised offshoots of any series, but in the growing stem from which it is parted. The highest specialisation is that based upon perfection of the greatest number of parts, not upon the great development of one part at the expense of others. "We need not ask morphologists or embryologists whether man is the highest animal; we have the proof of it every hour before our eyes. His powers of mind are the resultant of his structure, and have enabled him to conquer all other beings in the struggle of life. That animal is highest which possesses the widest range of faculties. This man undoubtedly does. No other animal has the power, by voice or pen, to exaggerate or depreciate its own importance; no other animal can use the powers of nature as he; no other can produce works which are proportionately comparable to his; and if, therefore, morphology or embryology contradict the facts of life, then are those sciences unsafe guides, as they certainly are only partial ones."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

THE TRUTH ABOUT EXERCISE.

It should be understood by the public, as it is known to the profession, that the aim of exercise is not solely to *work* the organism which is thrown into activity, though that is one, and a very important, part of the object in view, because as the living body works it feeds, and as it feeds it is replenished; but there is another purpose in exercise, and that is to call into action and stimulate the *faculty of recuperation.* Those who believe in the existence of a special system, or series, of trophic nerves, will not object to this designation of the recuperative function as a separate "faculty," and those who believe nutrition to be effected in and by the ordinary innervation will recognise the sense in which we employ the term in italics. It is through defect or deficiency in the vigour of this faculty, unaccustomed feats of strength, whether of mind or muscle, are found to be exhausting. The task is performed, but the underlying faculty of restorative energy, or power of recuperative nutrition, located in the particular part exceptionally exercised, is not in a condition to respond to the unusual call made upon it. When a man goes into training, or, which is practically the same thing, when he habituates himself to the performance of a special class of work he so develops this recuperative power or function that the repair or replenishing necessary to restore the integrity, and replace the strength of the tissue "used up" in the exercise, is instantly performed. The difference between being accustomed to exercise and able to work "without feeling it," and being barely able to accomplish a special task, and having it "taken out" of one by the exploit, whether mental or physical, is the difference between possessing the power of rapid repair by nutrition, and not having that power in working order—so that some time must elapse before recovery takes place, and during the interval there will be "fatigue" and more or less exhaustion. The practical value of a recognition of this commonplace fact in physiology will be found in the guidance it affords as to the best and most direct way of developing the power or faculty of recuperation by exercise. Many persons make the mistake of doing too much. Exercise with a view to recuperation should never so much exceed the capacity of the recuperative faculty as to prostrate the nervous energy. The work done ought not to produce any great sense of fatigue. If "exhaustion" be experienced, the exercise has been excessive in amount. The best plan to pursue is to begin with a very moderate amount of work, continued during a brief period, and to make the length of the interval between the cessation of exercise and the recovery of a feeling of "freshness" the guide as to the increase of exercise. We do not mean that false sense of revival which is sometimes derived from the recourse to stimulants, but genuine recovery after a brief period of rest and the use of plain, nutritious food. If this very simple rule were carried into practice by those who desire "to grow strong," there would be less disappointment, and a generally better result, than often attends the endeavour to profit by exercise unintelligently employed.—*Lancet.*

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

HOW A DOG PLANNED AND EXECUTED WITH REFERENCE TO THE FUTURE.

Mr. King, of River Falls, Wisconsin, writes in *Science* as follows:—Six weeks ago, Prof. J. B. Thayer, of this place, returned from Ree Heights, Dakota, bringing with him one of a litter of eight pups raised by a slut of the setter breed. The story which he relates to me of this pup's mother is, it appears to me, worthy of the record.

The good mother appears to have discharged her arduous duties as only a mother can, and arrived with her eight babes at a time when they should be weaned. At this juncture, judging from the events reported to have followed, she seems to have conceived the idea that too many dogs were occupying the same claim, and that a distribution was desirable. Accordingly, she started one morning with three of her pups, and was observed by Miss Rosa Cheney, now of this place, running in the road toward their claim at a rate which made it impossible for the pups to keep pace with her. The dwelling where she lived, and another shanty on the adjoining corner of another claim, are situated one mile and three-fourths from the dog's home. The mother reached the claims in advance of her babes, but no sooner had they arrived than she hurried on at her best pace. Miss Cheney reports that "the puppies came up all out of breath, and apparently too tired to continue; but the smallest of the three followed on." Another claim was reached three-fourths of a mile beyond; and here Miss Cheney observed the mother stop until her panting babe came up, when she immediately set off again. A quarter of a mile beyond the last claim, the mother was observed to make a third halt as before, and then to pass on beyond the range of vision, towards Ree Heights, with the puppy still following her. Two days later the persistent mother, with her more persistent babe, was observed coming back; and Miss Cheney tells me that the little puppy appeared almost dead from fatigue.

Some days later the dog led off two more of her pups, and succeeded in leaving them both; but in the mean time the two puppies left the first day were returned. A pup was also left at Professor Thayer's claim, but was returned, and exchanged for another. Both Professor Thayer and Miss Cheney assure me that other efforts of the same kind were made by this dog, but with what results they are unable to say.

After the puppies had been distributed, they were not forgotten; for the old dog used often to go and play with them. Professor Thayer mentions one instance of her coming and playing with the puppy left at his claim until it was very tired, when she lay down by the side of it; but, after it had gone to sleep, she quietly walked to the opposite side of the house, and then hurried away in the opposite direction from home for a distance of about forty rods, when she turned and went directly there, thus showing quite clearly that the thought of distributing her puppies was still uppermost in her mind.

What events may have awakened this desire on the part of the mother, or what reasons she had for her acts, we do not know; but in her own mind I have no doubt the case was urgent and the way clear, if not also just. It would appear not only that this dog must have thought her plan through, but that she must also have held it definitely in mind for several days while she executed it, thus indicating quite unequivocally, it seems to me, that one animal at least, ranked lower than man, possesses the power of looking into the future and of executing plans deliberately laid with reference thereto; "man is the only animal which has the power of looking into the future," to the contrary notwithstanding.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

WHOLESALE ADULTERATION.

Sir,—In England we frequently complain, and generally with good reason, of the systematic deterioration of our food, and the dangerous commixture of poisons with our textures, &c. Still we at home have a certain chastened satisfaction in knowing that in some civilised countries matters in this respect present a much worse aspect than with ourselves. The British Isles are to the American official mind a very paradise of honest tradesmen—a country where grocers, bakers, brewers, &c., never sell their customers anything than that which they set forth to sell. It was not so once, our transatlantic neighbours will tell you, in which assertion they are right, inasmuch as it is no *great* length of time since that a raid upon shopkeepers' goods on this side of the water, and out of sixteen thousand samples of goods of various kinds that came under test, three thousand of those sixteen thousand were found to be so much adulterated as to secure the conviction of the vendors. In spite of this, there are still to be found in the United Kingdom cases of ladies being poisoned by burning arsenical candles in their bedrooms; of single packs of playing-cards containing a fifth of an ounce of arsenic apiece; of coffee made of mahogany sawdust and baked liver; of upwards of fifty persons being poisoned in one year by wall-papers; of tinned fish heavily contaminated with lead. Yet, in spite of these trivial blemishes, and about a thousand others equally abominable and not the less dangerous to human life, the Americans look upon Great Britain as a land in which people may eat, drink, and clothe themselves without the slightest fear of unlooked-for results. This being the case, and reports have for some time past stated it to be so, what may we conclude as to the character of the American manufactured product, and the degree of peril which is involved in an existence in the United States?

Nothing indeed, if we may judge from some published reports, dating only a year or so back, would appear impossible at the American store. Not only is every adulteration known to the comparatively unsophisticated British tradesman in vigorous employment, but improvements upon them all, deadly when poisonous, and unwholesome when not, are frequently practised. Children meet with an untimely death through wearing coloured stockings, and women die from the cosmetics they use. The vinegar is poisoned with sugar of lead, the pickles with verdigris, the sugar with chloride of tin, syrups with calcium, hams with glucose, and almost everything with something. A large New York house were advertising a short time ago three grades of cream of tartar, and a Boston chemist, who *maliciously* analysed a sample of the first quality, found it to contain 50 per cent. of terra alba. What would have been found in the worst it is difficult to say; but instead of analysing cream of tartar for white earth, it would probably have been more to the purpose to analyse the white earth for cream of tartar.

Baking powders are invariably manufactured with alum, and the receipt for pickling fluid is dilated sulphuric acid, with alum and white vitriol or verdigris added to taste. This, however, would only answer for green-coloured pickles, and if the yellow be preferred, sugar of lead and chromium take the place of blue vitriol or verdigris. One great firm for pickles buys its sub-acetate of lead five gallons at a time, and its verdigris by weight. These pickles are sold in New York, and the people who eat them are said to eventually die of poisoning. Tobacco, again, is tampered with in ways that "would not only disgust, but terrify" consumers, and as a sample of what may happen, we are told of cigarettes charged with opium and rolled in arsenical paper, the result being that young men go to the

hospitals for the removal of cancers on the lips. In confectionery and sweetmeats there is, of course, a practically unlimited field for the use of colouring poisons; but, assuredly, the very infamy of crime is reached when a shopkeeper deliberately hands over the counter to a child, a lump of terra alba, sweetened with grape sugar, and made gay with arsenical paint. If anything can be worse than this it is for the druggist to dilute his medicines so that the patient, receiving his doses far below their strength, dies. Yet both of these practices were gibbetted in a report not long ago from America. Spices afford, of course, a fertile field for ingenuity in artificial flavours, and to attain them the chemical shopkeeper does not scruple to use the most formidable poisons. Mustard and pepper are subjected to commixtures that are either horrible, or grotesque, or dangerous; while the method of adulterating preserves, jams, and jellies, are revolting even when not actually perilous In these, and other adulterations, arsenic plays a very important part; but when it is considered that the annual importation amounts to over two million pounds, and that one can buy for a cent enough to kill two thousand eight hundred people, the terrible list of annual deaths from this cause is astonishingly small. By far the greater portion of that which is imported is used in manufactures in which its presence is not known, or, as is frequently the case, even suspected by the purchaser. For instance, there are cases of cloth containing eight grains to each square foot, and others of artificial flowers containing ten grains, and of children dying through veils that are thrown over them in their crib whilst asleep to act as a protection from the sun and flies; then we find cases of children dying through sucking toys, buttons, and wearing coloured stockings; whilst grown-up persons suffer terribly, and even for life, by the poison of tinted underclothing, or blue veils, or gloves, and coloured hat-linings. The accumulation of such facts as these—and they would fill volumes—presents this industry of manslaughter in very dreadful proportions. The foregoing is no fanciful picture; on the contrary, it is list of facts—facts unadorned—coming from the fountain-head—America itself.—I am, yours, &c.,

Thomas Pearson.

DISINFECTION BY BOILING.

Sir,—The meritorious aim of Health is to disseminate sound hygienic principles. The first rule, then, must be that nothing is taken for granted which has not been proved. I see amongst the "Notes" in to-day's number, the following:—"When either (water or milk) is suspected of being impure, rigid attention to perfect boiling of the liquid in question will be found an effectual preventive of any diseased action."

I am, of course, aware that in many instances, persons who had partaken of boiled beverages, escaped infection by milk or water, to which they evidently had been exposed. Boiling appears thus a considerable safeguard against disease; but I believe it would be important if you were clearly to express your views whether or not you look upon it as an *absolute* safeguard. Allow me here to refer to a lecture by Professor Tyndall at the Royal Institution, June 8, 1877. He is reported to have stated that, "during his investigations, which occupied him for six months in 1875-76, he had found it to be a rule without exception, that various infusions, which had been boiled for five minutes, would not putrefy in an atmosphere in which all germs had been allowed to subside. But in the autumn of 1876 he found that infusions, apparently the same as those prepared in the previous year, were not sterilized by boiling for fifteen minutes." He thus concluded, and proved by experiment, that in the latter infusions, "a more obstinate contagion was present, which the former had escaped."

This observation, I believe, led to the method of disinfection by *discontinuous* heating, which is now generally used when liquids have to be sterilized. Thus, Dr. Koch, of Berlin, sterilizes his nutritive gelatine by boiling in a water bath on three consecutive days for fifteen minutes each. I am not aware of any direct proof that the actual germs of disease are more readily destroyed by boiling than the bacteria of putrefaction.—I remain, &c.,

London, *January* 18, 1884. Gustav Bischof.

[We agree in the main with Mr. Bischof's remarks; but he knows that the death-point (by boiling) of germs not only varies greatly, but may be said to be practically undetermined. Further, we know practically nothing, as yet, of the germs of typhoid, cholera, &c.; and, so far, the evidence, *re* boiling, on Mr. Bischof's own showing, is negative. But this much seems clear, namely, that the risks of infection are at least greatly lessened by fluids like milk and water being boiled—we do not say such risks are avoided or made obsolete. No one doubts that effective boiling must produce at least a suspension of activity of germ life—that in many cases it must actually kill many organisms, is a highly feasible supposition. And if it be added that healthy digestive processes in their turn will probably exert a destructive action on germs at large (and more especially on germs or organisms rendered temporarily inert by boiling), the justification of our advice to boil water and milk is easily found. Boiling, in our opinion, is infinitely preferable to filtration as ordinarily practised. No process of filtration, short of one involving destructive "disinfection," can affect the microscopic "germs" of disease. And that heat is, after all, our best safeguard, is proved by the preference of sanitarians for disinfection by means of steam and hot air.—Ed. "H."]

A HOUSEHOLDER'S GRIEVANCE.

Sir,—The following plain statement of facts may, perhaps, be of use to some of your readers, and may serve as a warning to those who think that they have done everything to make their houses perfectly safe in a sanitary point of view.

Eighteen months ago I purchased a house for my own residence, in a healthy suburb of the North-west of London. The house in question had been constructed by the best builder in the place, by whom, and by whose foreman, I was *repeatedly and explicitly assured* that it, and all the other houses on the estate, were well and specially drained in a given direction; that the sewage was partly purified, and finally ran into a tributary of the Thames, which drained the valley. Moreover, I was told that in this particular the houses of that estate differed from all the other houses near, which only had cesspools. Before I decided on the purchase, the medical officer of health for the district recommended the house to me as the best-situated and best-built in the place, and two independent architects and surveyors employed by me (one of them a professed sanitary officer) reported most favourably of the house after inspecting it, simply recommending some trivial alterations, which I made.

Before I had been living many months in the place I was frequently troubled by stoppages in the drains, and each time that this was rectified by the builder the same account was given to me about the local estate drainage. At last these stoppages became so frequent that I had the ground opened up, and then found, to my utter amasement, that, notwithstanding all that I had been so repeatedly told as to the drainage system on the estate, my house-drains led—nowhere! not even into a proper cesspool at a good distance from the house; but that they came to an end at a distance of less than ten yards from the dining-room window, where, of course, there was an accumulation of filth. Moreover, the drain from the servants' closet actually ended close under the dining-room window. All this not only accounted for the trouble we had had, but gave a very sufficient reason for the persistently wet condition of a patch of ground close outside my premises, which in time is to form part of a new side road.

I have now had 6 in.-pipe drains properly laid to carry the sewage to some distance from the house. Have I any legal remedy for this gross misrepresentation against the builder from whom I purchased the house, or is it only another case of *caveat emptor?* Perhaps you, or some of your legal correspondents, can inform yours truly, One of Your Contributors.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.

GENERAL.

J. Aitken.—Thanks for your letter, which has received attention in Health No. 42.

Bessie.—Probably not; at least not in the experience of physicians generally.

Alered C.—1. Try the first-named. 2. A *villus* is a minute projection of the wall of the intestine, through which the chyle, or digested food-products, pass on their way to the blood.

Andrew Carter.—No relationship whatever.

James.—"Calculus" is a term for "stone," such as forms in kidney disease. "Biliary calculi" are gall-stones, which form in the gall-bladder, and pass down the duct into the intestine.

Ontario.—Yes; suitable for your case.

B.A.—1. The University of St. Andrews grants the M.D. degree (by examination) to qualified practitioners of a given age. No residence required or attendance on classes. See the University "Calendar." 2. Yes; L.R.C.P. and L.R.C.S.E. of the Edinburgh Colleges are thoroughly good qualifications; but, after all, it is the man that makes (and honours) the degree and qualification—not the degree that makes the man.

Oxonian.—To call the ways and works of Mr. Irving Bishop or Mr. Stuart Cumberland "thought-reading" is a piece of quackery. We are quite open to allow any thought-reader who will pay us a visit to attempt to read the number of a five pound note known to us and lying in our purse, which, in turn, lies in our pocket, and to award him the note if he is successful. In such a case we will think strenuously of the number, and allow any amount of brow-pressing or other needful manipulations of our cranium; but we shall not, under any circumstances, allow the note to pass from our pocket. If "thought-readers" can perform what the term in question shows they pretend to, we are open to experiment at any convenient time and place.

Ernest C.—1. Illegal, decidedly. 2. Dangerous to attempt it.

Bathwick.—There are two organs of voice in birds; one at the upper part of the windpipe, and one below where the windpipe branches.

C. A.—1. We have never heard of the firm you name. 2. The pamphlet is a quack production.

B. L.—We fail entirely to see wherein we have been discourteous to you. You sent us a letter stating saliva was a cure (in your opinion) for warts. We commented thereon, giving your opinion, and adding ours—the latter right you surely can't deny to us. We also added that we believe yours is a "faith cure." There is nothing discourteous in this—unless to differ from you constitutes the head and front of our offence. As for the somewhat unfair (and on your part discourteous) innuendo, that doctors won't adopt your remedy because it isn't a "paying" one, we may say that as we are not aware any doctor makes a fortune by curing warts, your hint falls somewhat flat. As a doctor's widow you should be more generous to a noble profession—and to the Editor of Health. You will be able to judge more fairly of us when you see the prominence we have given (in No. 42) to your topic.

A. Wardrop.—Very sorry we can't assist you. We know nothing about class or other arrangements of the matter you inquire about.

SANITARY.

Inspector.—The mean annual death-rate of England and Wales is given as follows:—1841-51, 22·33; 1851-61, 22·25; 1861-71, 22·50; 1871-81, 21·27.

Inquirer.—"Cooper's Salts" consist of a compound of chloride of sodium, lime, and magnesium.

C. D.—Blowing off steam into sewers is condemned by sanitary authorities; and no hot water should be allowed to run into them, as such treatment is believed to hasten putrefactive decay.

G. J. N.—Cases of poisoning by lead after drinking cider have been caused by that fluid taking up the lead which coats the cider-troughs.

Health-seeker.—1. No reformer could for a moment prefer an intermittent to a continuous water-supply. About 25 gallons per head per day is a fair estimate—exclusive of municipal and trade purposes. 2. See recent "Notes by the Way," and Mr. Buchan's letter in a recent number regarding typhoid fever infection from open drains.

F. W. C.—The material is more thoroughly permeated by the leavening influences; no yeast may be used: and by many the aërated is regarded as being more digestible. As regards nourishing properties, those depend on the flour, &c., and not so much on the manufacture.

MEDICAL.

Saxon.—See and follow advice given to "A Poor Man" in Health No. 37 (page 190.) Try the effect of taking a little "Æsculap" water occasionally in the morning as a mild aperient. A vegetable diet might be the renewing of your health. Glad to assist further, if not relieved as above.

Glenisla.—You should know that what you name is, in your case, a sign of health, and in no way a disease. You are quite well. You must not, however, take the tonic continuously, but leave it off, and trust simply to careful living, cold baths, and out-door exercise.

C. R.—You should, in the first place, rest after food; and avoid all exertion of a *sudden* character, and such as is apt to strain you. See well to your digestion, and take a mild aperient occasionally. If the symptoms continue, you should have your chest thoroughly examined by an Edinburgh physician. We shall be glad (if desired) to send you the address of a reliable authority, on receipt of stamped addressed envelope. Yours is a case in which, for the relief of your mind, you should have a good opinion.

G. P. P.—What you complain of may arise from a number of causes. You should undergo an examination by a good surgeon. In such a case the cause is only to be detected by the personal examination of a patient.

Padd.—We have often had to consider the question you put to us, and which, we admit, is an all-important one. The following are the rules for safety:—Never to tricycle (1) if aware of the existence of any displacement or if ailing; (2) if the exercise is attended afterwards by back pains and fatigue; (3) if any functional irregularity (as is indicated in your case) becomes frequent; (4) and never just before (or after) such functional events occur. Above all, be moderate in the exercise. Glad to answer more fully, if required.

A City Clerk.—Attend to the following rules:—1. Sleep on a hard mattress. 2. Sponge with cold water each morning. 3. Avoid taking fluids before going to bed. 4. Take open-air exercise to a moderate extent. 5. Avoid stimulants and highly-spiced food. 6. Take (for a time) a teaspoonful of Fellows' "Syrup of the Hypophosphites," in a wine-glassful of water, thrice daily before meals.

J. N. B.—See and follow advice given to "A City Clerk" above. You should attend specially to cleanliness, washing with tepid water and soap, and removing all offensive matter. Yours is a case in which also more fresh air and exercise are demanded. Study less and walk more.

One Afflicted.—Try the effect of hot salt baths twice or thrice a week at bedtime. Food to be plain, but nourishing. (Read our "Answers to Correspondents" and you will see the impossibility of your letter, dated January 15, being replied to in our issue of January 18. You don't allow for printing and publishing, evidently.)

Jennie.—Look to your digestion; take "Æsculap" or "Friedrichshall" water in the morning as a mild aperient; avoid suppers, and study (and follow) advice given to "H. C. E.," in Health, No. 40 (p. 238).

Jas. Thomson.—We regard your case as one in which your nervous system is somewhat affected, possibly by what happened abroad, and also by your worrying yourself over-anxiously about your health. We agree that your diet (which should be plain and not stimulating) must be regulated carefully if you are to regain health. Our advice is that you should take a prolonged rest, away from home, and have change of air and scene. Take a little "Pepsine" with your food to strengthen your digestive action, and a little mineral water (such as "Æsculap") taken occasionally in the mornings will serve as a mild aperient. Yours is not, in our opinion, a case for drugs. We shall be glad to be of any further service to you.

Gautier.—In such a case as that you describe the symptons may proceed from a variety of causes. Our best advice to you is to procure a thorough medical examination by a consulting physician. The symptoms appear to us to point to some asthmatic affection, and such an affection is often accompanied by heart-symptoms. The physician you name at Leeds is in every way a trustworthy authority. We should certainly advise her to refrain from all violent exertion until she has had a medical opinion.

Wandsworth.—We advise you not to tamper with salicylic acid, and not to take that drug save under medical observation. It is a drug which in its administration requires careful watching, and there may exist in your case conditions or symptoms which contra-indicate its use.

J. Watts.—You should know that your affection is often very obstinate in its nature. Try injections of Condy's Fluid (1 to 10 or 15 of water) thrice daily; take 15 drops *Fer Bravais* thrice daily in water; rest as much as possible; see to your general health; and try a change of air—visit the seaside if possible. Write again if not cured.

A. W. G.—Thanks for cutting.

T. W. H.—See advice to "A City Clerk," in present number of Health, and, above all, don't grow morbid. You should know that what you complain of, unless excessive, is perfectly natural in healthy persons. If not better, write again.

J. W. Reid.—Try the effect of the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, one-and-a-half drachms; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Avoid tea and coffee for a time, and avoid constipation. Write again in a few days after trial of above.

Dark Gipsy.—Yes; there is no doubt that such milk is quite as nutritious as ordinary milk. The brand you name is a good one. Analysis proves that the milk-constituents are present in the milks you inquire about as in ordinary milk—provided the former are not overloaded with sugar, &c.

Hopeful.—What is it you complain of? You are a perfectly

healthy person, needlessly alarmed at what is a perfectly natural occurrence in most healthy persons. Don't grow morbid or be so foolish as to think you are ill.

J. Black.—You do not give a very clear account of your case; but it is tolerably certain that your case is one simply for frequent washing and strict cleanliness. Apply a little pure Vaseline to the parts.

J. E. W. E.—See advice to "T. W. H." and "Hopeful," in present number. If that does not apply, follow advice to "A City-Clerk," in present number; and, above all, don't be uneasy, and steer clear of quacks.

A Constant Reader (will please use some more distinctive name) should take "Æsculap" or "Friedrichshall" mineral water occasionally, in the mornings, as a mild aperient; and the following lotion might be tried as a preliminary measure:—Oxide of zinc, four drachms; glycerine, one drachm; lime water, two drachms; rose water, six ounces. Apply as a lotion to the parts affected. Report progress thereafter.

J. B.—Attend to cleanliness; and follow advice to "J. Black" in present number of Health.

Ivory Jack.—Consult a dentist; but in your case we think it would be as well for you not to meddle with the teeth. Such deformities are often impossible of cure.

Postman Bill.—See advice to "T. W. H." and "Hopeful," and also to "A City-Clerk," in present No. of Health.

Dyspeptic.—All in good time; but the last topic you name is hardly suitable for the pages of any but a medical journal.

G. S.—To prove that you are in a morbid state of mind is easy from your letter, in which you mention your belief in the nature of what "passes away"—a belief utterly erroneous. If you think of this as you do, there is little wonder you are morbidly sensitive. All we can say to you is once again, improve your general health; go for a complete change; take a sea-voyage—anything to brace you up, and to put you into a more cheerful frame of mind. Your letter is a plain evidence of your mental state. You have but "one idea"—that you are dreadfully ill—and with this fixed idea, all advice (and drugs) are useless. We have given you our best advice as above. Consult a good medical man in London if you will, and see if he does not confirm our views.

M. M.—We should suggest your trying the effect of giving the child cod-liver oil (or the emulsion), to which some syrup of the iodide of iron has been added by your druggist. Give him this regularly for a time, and let him also take plenty of milk and cream. Fresh air will do him good. See that his bed-room is well ventilated. What you name is not itself a disease—only a symptom of a little weakness that wants correction by such treatment as above ordered. Smear the eyelids with Vaseline at night. Glad to be of further service.

Scrutator.—No; cold sponging should be taken in the morning only. Persevere in the treatment ordered; and take plenty of fresh air and exercise.

Trachea.—You should seriously consider the advisability of trying cold sponging to the chest each morning, and brisk friction thereafter. See that there is sufficient reaction, however. Take a dessertspoonful of cod-liver oil thrice daily, after food; let your diet be light, but nourishing; and when the cough is troublesome, try the following:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half an ounce; infusion of senega to make up six ounces. A tablespoonful every four hours.

H. Bord.—Try the effect of taking a mild aperient (such as "Æsculap" Water) in the mornings, occasionally. Attend strictly to your general health; and apply carbolated Vaseline to the parts. If not improved, write again, describing your health more fully.

Hogarth.—1. Try the tonic (for a time) recommended to "A City-Clerk," in present number of Health, instead of the steel. 2. Don't irritate the parts further at present. 3. Before taking the step you name consult a surgeon. We can send you (if desired) the name of a reliable authority on receipt of a stamped addressed envelope. In such a case a personal examination alone can safely determine the exact state of matters.

Consumption.—No need for alarm so long as you attend strictly to your general health in the way of food, clothing, ventilation, &c. You should follow that part of the advice given to "Trachea" (in present number of Health) relative to cod-liver oil; but yours is a case simply for the careful watching of your general health.

G. Herbert.—Read and follow advice given to "A City-Clerk," in present number of Health. Our remarks to "T. W. H." and "Hopeful" (also in present number) should also be perused by you. You have run the gauntlet of quacks, and have (as usual) had all your symptoms exaggerated. If not bettered by following advice above indicated, write again.

Layman.—The herb you name has simply astringent qualities, similar to those possessed, for example, by weak tea. That it (or any other drug) can remove dimness of sight is an utter impossibility. As we told you before, yours is a case for the saving of your sight by a judicious selection of glasses. Lotions can do you no good, as you will find after trial.

Ted Garth.—The operation might have been of service if it had been performed in time, only it was surely some other disease than that you name for which it was proposed. Are you certain it was not croup or diphtheria? In a bad case of the disease you name, the patient dies of suffocation, and there is high inflammation of the organ of voice and neighbouring parts.

Short.—Growth *may* take place after the age you mention. No special means exist, however, save attention to diet, nourishing food, out-door exercise, and wisely-ordered gymnastics.

Petit Garçon.—Nourishing food, cod-liver oil (or the emulsion) taken through the winter; plenty of milk and cream; and out-door exercise to stimulate nutrition. See the recent papers in Health on "How to Get Thin or Fat."

L. A. M.—Live carefully; avoid chills above all; and avoidance of constipation. As a lotion, try the effect of bathing the part with a little tepid water in which bicarbonate of soda has been dissolved.

Repentant.—Steer clear of *all* advertising doctors, if you are wise. Read and follow advice given in present number of Health to "A City-Clerk."

N. S. S.—Doubtless a "wandering" mind might be made to concentrate its activities by a strong mental effort; but our advice to you is to see well to your general health as a first measure. A change of air is often an efficient mental restorative.

R. H. D.—Your ailment is not uncommon, and is sometimes obstinate in its nature. You might try the following lotion: Dilute hydrocyanic acid, 2 drachms; bicarbonate of soda, 1 drachm; glycerine, 6 drachms; rose-water up to 6 oz. Label: "For external use only. The lotion." Write again if not bettered.

Salvo.—Your letter interests us. What you name is by no means an uncommon occurrence, and is due simply to extreme nervousness. Probably by the time you read these lines you will have found that all has come right, and that you have overcome your fears. Be careful of your health; don't be over-anxious or over-hurried in your movements, and use cold-water sponging each morning. Let us hear if our prognostications are correct.

Alchemist.—We fancy the liquor of the citrate of magnesia (which consists of the citrates of magnesia and potash, with syrup of lemons) would suit you.

F. W. D.—1. The bill is a quack production. 2. Yes; both are fattening, if taken with milk especially. 3. No; such topics are not suited for our journal. 4. No, not too frequent if only once a week or so.

Dow.—We fancy you would improve on a vegetable dietary. Give this a trial, and what you complain of may be cured thereby. The pain has its seat in the liver. Look to your digestion also; let your food be very light for a time; and write again in a short time, after trying this advice.

Mariner.—See and follow advice given to "A City-Clerk," in present number of Health.

A New Reader.—We fancy you are of an extremely nervous temperament. Try what a half-dose of the tonic will effect. No objection to using tonic and inhalation at same time; but our principal advice to you is to rest entirely for a time from all work whatever, and live generously. You are over-anxious about yourself. Try rest first. Glad to be of further service.

E. F. H.—No; moderate smoking will not harm you. See and follow advice to "G. Herbert," in present number of Health. Remember that you suffer from no actual disease; only weakness, which time and observance of advice above indicated will cure.

H. W.—(You must be careless to address your letter to the "Printing-office" instead of to the "Editor." Please note that the Editor, not the "Printing-office," has charge of a journal.) Yours is simply a case for wise digestive treatment. Let your food for a time be light and nourishing, and take a little Morson's "Pepsine" with meals, and a little "Æsculap" Water in the mornings as a mild aperient. We do not think you need fear any other ailment—provided you are not "ruptured" in any way. Touch the warts with aromatic vinegar, and be careful not to let the vinegar come in contact with the skin.

J. N. Mackie.—We do not think you could incur harm by trying the food-experiment you name very cautiously, avoiding excess, beginning with little, and giving it up on appearance of any symptoms of the old trouble.

An Anxious Mother.—The case you name (and with which we greatly sympathise) is one in which all the symptoms (mouth and otherwise) arise from the original nervous disorder from which the child still suffers. Our best advice to you is simply to do all in your power to keep up his general health. Attend strictly to food and warmth, and, above all, don't force his education. We question

[*Continued on page* 288.

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whether such a child should be sent to a public school, with all its risks of cold, &c. No surgical treatment is of avail, but electricity (properly and regularly applied by a physician) might be tried as a hopeful means of alleviation or improvement. Glad to be of any further use.

F. G.—The case is a complex one. We should recommend hot salt baths, careful living, avoidance of all acid diet, and light food (chiefly milk, &c.) for a time. There likely exists, however, a complication of troubles, which only a consultation with an experienced physician will relieve. The skin-disease is only a symptom of the constitutional and general disorder.

W. R. P.—Try for dandriff sponging your head several times a day with a strong solution of borax and water; or you may try applying glycerine and borax at bedtime. This to be kept on all night. Failing these (which should be first tried), try borax ointment, made by adding 1 part borax to eight of simple ointment or Vaseline.

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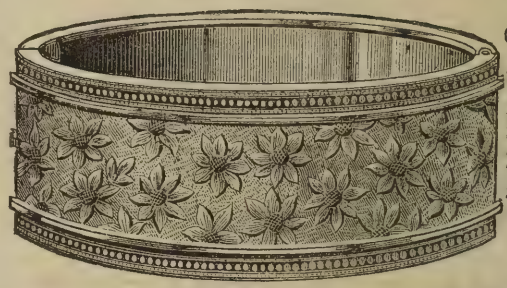

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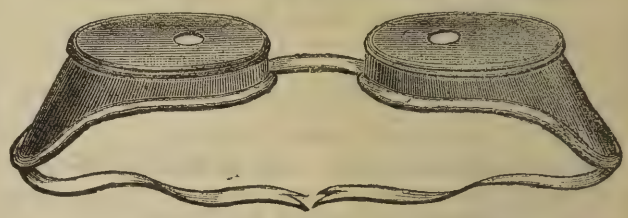

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 8, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The "wart" question still agitates the minds of many readers. Doubtless "warts" may be described as social nuisances; and, in the interests of health (and beauty), we are quite willing to give our correspondents plenty of rope in the ventilation of their views. From a mass of letters, we select the following as a fair sample of a wart cure of a sensible kind enough. A persistent wart, which had resisted all ordinary remedies, was cured by making a very strong solution of common washing-soda, and by applying this fluid night and morning to the wart. Our correspondent adds that he supposes the soda kept the wart moist, and thus caused it to disappear; but he ought to know that soda is a caustic of mild type, and that his treatment was similar in its nature to that illustrated by applying ordinary "caustic" to the growth. After all, this great "wart question" seems to teach us, from a new standpoint, the truth which is contained in the opinion that individual differences form a very important element in determining success or failure of medical treatment. That "what is one man's meat is another man's poison" is, of course, a familiar piece of proverbial philosophy; and it would appear as though that which cures a wart in one person—"charming," saliva, and the other faith-cures included—may be inefficacious in another patient. Here, as elsewhere, the true solution of the difficulty is to be found in the discovery of the remedy—mental or physical—which is best adapted to the individual case.

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Another case of poisoning by quack-medicines! A boy, nine years old, lately died at St. Helens from a dose of a fluid called "Indian Tincture," purchased by his mother from a grocer. Death was discovered to be due to some form of narcotic poisoning. The grocer from whom this medicine was obtained produced the bottle from which he dispensed the "tincture." It bore that the tincture was "admirably adapted for everybody" as a remedy for coughs, colds, &c. A graduated scale of doses was also appended, from which it appeared that the mother had given her boy a strong overdose of the medicine. The grocer admitted that he had not said anything about the dose to the mother, as he imagined she knew its power, the "tincture" being a "common medicine." The "tincture" was said to be a mixture of Indian hemp and ether—two compounds in themselves requiring cautious administration. We learn, once again, the bitter lesson taught by the present state of the law regarding the sale, by unqualified persons, of dangerous remedies. Even in the case of an ordinary "patent" medicine sold by a druggist, the bottle would have been duly labelled and the correct dose indicated. As it was, the grocer dispensed a poisonous mixture without directions, and furthermore declared that "there was no maker's name on the bottle, that it came from Daubhill, near Bolton, and that he did not know the name of the man who brought it." Further comment on such a state of matters is absolutely needless.

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The subject of "Provident Dispensaries" is one worthy the attention of all interested in the ready obtaining by the masses of sound medical advice at a fair rate and charge. The Fourth Annual Report of the West Cheshire Provident Dispensaries lies before us, and from its pages we are glad to see that a prosperous career attends this association. The list of names constituting the committee and officers is a guarantee of the high character of the institution. The working-classes avail themselves largely of the advantages presented by the dispensaries; and by payment of a small sum, secure efficient medical advice, avoid quackery and all its risks, and further ensure that medical men obtain remuneration for their services. The problem of the "unpaid doctors' bill" seems thus to be practically solved for the masses.

✣ ✣ ✣

The scale of monthly payments in force at these dispensaries is as follows:—For each person above sixteen years, 3d.; for man and wife, 10d.; each child up to three years, 2d.; a widow, 4d.; each child of a widow up to three years, 1d.; and members of sick benefit societies, 4d. Not more than three children are charged for in one family; and persons whose income exceeds 40s. per week are not eligible for membership. This latter provision strikes at the root of all abuse in the operations of such a scheme. Payments are made in advance. Not the least important part of the scheme is expressed in the idea that if working people know they can secure the attendance of the doctor at all times, they may thus check the inroads of disease and prevent the development of many serious ailments. There is no nobler scheme of health-help in existence than "Provident Dispensaries"; and we shall gladly do all in our power to aid the extension of such a movement in districts not yet supplied with these institutions. Better far to encourage the masses to support such a scheme than through any neglect or discouragement of its principles, to foster quackery, and to make the masses dependent for medical aid on a charity which saps at the root of all independence.

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We have pleasure in calling attention to the work of the "Association for Promoting Trained Nursing in Workhouse Infirmaries," the Honorary Secretary of the institution being Miss Wilson, 42, Powis-square, London, W. As we intend very shortly to begin the publication in Health of a series of "Lectures on General Nursing," by Dr. Allchin, Physician to the Westminster Hospital and to the Westminster Training School for Nurses, we may here express our warmest interest in the nursing profession, and in the great and important work the nurse is now trained and educated to effect. It has been contemplated to begin in the pages of Health a "Nurse's

Column" for the ventilation of matters dealing with the topic of "Nursing," and we shall be glad of the co-operation of those of our readers interested in this question in making known to the profession this intent. By the aid of the papers on "The Body and its Structure," already published, and of those to come—as well as by the publication of all information likely to interest not only nurses themselves, but mothers and others occupying the responsible position of heads of households—we hope to increase, in still further measure, the usefulness of Health.

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A curious return, showing how the sad side of human life ends its days in Paris, has just been published. The number of suicides in Paris during the past year was 542, being 63 more than the previous year. The favourite method of death was that by firearms; 217 persons having perished in this way. There were 148 cases of drowning, 81 of hanging, and 37 deaths were caused in the typically French method of burning charcoal in a close room. The remaining 51 cases included suicides by jumping from a height, by poison, and by throwing the person in front of trains and vehicles. There is a grim ingenuity and expression of choice illustrated in such an account of these varied modes of ending life; but who can form any idea of the sadness, misery, and pain of body and mind alike which prompted to the accumulation of such a record of ill-fated ends?

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The "heathen Chinee" has generally been regarded as a person given to many wheedling practices; and Bret Harte's character of Ah Sin in his well-known poem has doubtless done much to foster a belief in the "ways that are dark and tricks that are vain" of the Celestial Empire. But, according to the *New York Medical Record*, the Chinaman is a docile patient, and always pays his doctor's bills—a feature in which he might, with advantage, be imitated, to a greater extent than is usual, by western civilisation. He is also said to be a cleanly person, and to be scrupulously attentive to all medical directions when disease invades his dwelling. It is clear that the Chinese are not so far behind us as we are often apt to suppose. Thrift and patient industry, at least, are qualities which mark the race in no ordinary degree.

Dr. Andrew Wilson's lecture dates for the spring are as follows:—Perth, six "Health Lectures," to be delivered weekly, beginning Tuesday, Feb. 5; Airdrie and Alloa, eight "Combe Lectures" (Wednesdays and Thursdays), beginning Feb. 6 and 7 respectively; Falkirk, six "Health Lectures," on Fridays, beginning Feb. 8; St. Leonards, four afternoon lectures on "Anatomy and Physiology" (as given at Prince's Hall, Piccadilly, London), on four Saturdays, at three o'clock, beginning Saturday, Feb. 16; Plymouth, four lectures (as at St. Leonards) in the Guildhall, on the evenings of April 28, 29, 30, and May 1; Middlesbrough-on-Tees, April 3, on "The Distribution of Animal Life." Other engagements are pending in addition to above-fixed dates. Mr. John Flack, 74, Great Queen-street, London, W.C., acts as Dr. Wilson's agent in connection with London and provincial lecture business.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

Original Essays

"Life is not to live, but to be well."—*Martial.*

EXAMINATIONS, SCHOOLS, AND HEALTH.

By Geo. G. Chisholm, M.A., B.Sc.

FIRST PAPER.

Nothing can be more notorious than that the examination system is becoming more firmly established and more widely extended among us every day. Yet it is very remarkable that there is no institution against which the outcry is more general on the part of all those concerned in it. The examiners in numberless cases detest and denounce it, and with good reason, for there is hardly any task to which a human being can be condemned more irksome than that of conducting examinations, and reading and valuing examination papers. Parents denounce it because they see the worry and overwork which it often causes their children, and children hate it absolutely.

Why, then, can't we get rid of it? That, however, is a question that might be asked with equal propriety regarding a number of other institutions which nobody likes, but which all have to put up with, even though they may seem to depend for their existence solely on the pleasure of those who maintain them. We may take as an instance that form of head-covering familiarly known as the "stove-pipe." At least three generations of trousered bipeds have inwardly fumed under the infliction; but chafe and fret as we may, we all know that we must submit.

And just so it would appear to be with examinations. Nobody likes them. We might fancy, therefore, that we should easily be able to put an end to them, yet we know that we can't. But there is a reason for everything, and when we begin to inquire into the reasons for the continuance of the examination system, we soon discover that the system exists to satisfy the wants of those concerned in it. In spite of their frequent denunciations, examiners want to examine, for their own prosperity often depends largely on the maintenance of the system. And in spite of their expressed aversion to the practice, parents want to have their children examined, and children themselves when they are old enough to choose a career, or to adopt one chosen for them, are eager enough to pass examinations, while even before that they can very readily be induced to submit to the ordeal by the stimulus of rivalry or love of distinction.

The truth is, that our examination system is a natural consequence of the struggle for existence in which we must all share. The increasing severity of examinations is only a phase of the growing intensity of competition which now characterises every department of industry in the widest sense of that term. The system maintains itself as an essential part of the battle of life which we all have to fight—all with a few exceptions not worth counting.

And after all, examinations are no new thing. In the days of our fathers and grandfathers there were examinations too, even though the institution may seem to be one of quite recent growth. Formerly, as now, the best fitted had to be selected for the different posts in life by some rough method as convenient as could readily be adopted. But in former times the qualifications required were more frequently fulfilled by the mere possession of a good *physique* along with an education of no very special kind. Candidates for appointments could, therefore, be examined as a rule by simple inspection, and the elaborate examining machinery of the present day could be dispensed with.

Nowadays, on the other hand, every department of business has become more complex, has come to depend more on careful organisation and on the intellectual ability of those concerned in its management. What is now sought for is mental capacity, and mental capacity, therefore, has to be tested. Hence our present examination system.

But if such is the case, the question that we must ask with regard to that system is not, Why can't we get rid of it? but, What is the use of protesting against it? It may be an evil, but it is an evil against which it is of no avail to rebel.

And it may readily be granted that examinations are, in some form or other, a necessity, and will never be altogether abolished. But if there are any evils in our present system, it does not follow that they are all equally inevitable. I have said that the present examination system is a natural consequence of the struggle for existence as at present carried on; but I have not said that it is an unavoidable consequence of that struggle. The laws of nature may be counteracted in their operation by the operation of other laws; and in human affairs, when things go wrong, the great hope of improvement lies in this, that human reason may be counted on sooner or later to operate in the direction of putting things right. That reason may so act, what is most needed is a just apprehension of the facts, and it is the function of a periodical like this to aid in diffusing such an apprehension of the facts in all that pertains to the preservation of health.

If, then, our present examination system involves in its working anything injurious to health, it is our business to show how it does so, and how the evils pointed out can be removed, if they can be removed at all. And it may be as well to state at the outset that if any such injurious consequences are involved, the best hope of improvement is to be derived from a perception of the fact that in that case, and in so far, the system fails of its aim.

A system as a whole is to be judged by the idea that governs it rather than by its practical working. Now, the idea at the root of the examination system has two aspects. On the one hand, the system is a means of finding the best men for the highest posts; on the other hand, it is a means of getting the young launched on a career in life through the obtaining of certificates of competence. But, for the highest posts we not only want the best men, but we want these men at their best, and, in so far as the examination system has a tendency to injure the health, it tends to defeat this aim. And, again, with reference to the ultimate aim of the candidates, or those who are responsible for causing children to undergo examinations, it cannot be too emphatically urged in a publication having the aims which it is our duty to keep in view, that no advantage in the battle of life is equal to that of vigorous health, and that consequently no gain to be derived from success in examinations can make up for the loss due to an enfeebled constitution.

But there are many who will stop me by contending that I am too hasty in assuming that the system in question does involve any serious dangers to health. They will say that the ill-health from which children suffer at school is not due to examinations, overwork, or any such cause, but is really due to "overcrowding in towns," to "bad ventilation," to this, that, or the other thing. But why, if we attend to certain causes, should the others be slighted? It may be quite true that all the things referred to do tend to bring about the result complained of, and yet the examination system may rightly bear part of the blame too. Nothing is, indeed, more likely than that various causes are co-operating to bring about the ill-health which we must seek to prevent. No doubt we have various enemies to contend against, and in dealing with them we must follow Napoleon's plan. We must attack them all wherever they are to be found, attack them at once, and attack them, when possible, singly, with all the force that can be brought to bear upon each.

But first of all we must make a *reconnaissance*. We must try to ascertain the exact nature of our enemies and to gauge their strength; and, therefore, I propose next to devote some space to showing that the current ideas regarding examinations and the present working of the system really are among the enemies of health, and in what way they are so. But this task must be reserved for a subsequent paper.

SANITARY GOSSIP.

By Dr. Thomas J. Hutchinson, F.R.G.S.I.

(*Corr. Mem. of Anthropological Society at Florence, &c., &c.*)

"An I prate of things here and there,
'Tis only *Gossip*."

HOUSE VENTILATION.

Unless with that newly-organised nomadic race "the globe trotter," our people in civilised countries pass the largest part of their existence within doors. In the offices, stores, counting houses, workshops, at meal times, and in bed we are inside-dwellers. Therefore, equal in importance, if not surpassing the necessity of fresh air outside, comes that of house-ventilation, by which the free fresh air is admitted, and should be constantly kept up in our dwellings.

The indispensable necessity for fresh air during our sleeping hours has been demonstrated by Miss Florence Nightingale during her Crimean experiences and is set forth in her "Notes on Nursing." It may be further verified by a few facts. If two persons are to share the same bed-room during a night let them step upon weighing scales as they are about to retire, and then again do the same thing in the morning. They will find their actual weight to be at least a pound less at the latter period. Frequently these will be a loss of two or more pounds, and the average loss throughout the year will be more than one pound per night. That is to say, during the night there is an exit of about one pound of matter which has gone off from the body, partly from the lungs and partly from the skin. The escaped article is carbonic acid gas, along with decayed, or rather waste, animal matter, or poisonous exhalation.

Now, if a single ounce of cotton be burned in a room, it will so completely saturate the chamber with smoke that one can hardly breathe, although there is only a single ounce of foreign matter in the air. Should an ounce of cotton be burned every half-hour during the night, the air

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Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

would be kept continually saturated with smoke, unless there can be an open door or window for it to escape. But the sixteen ounces of smoke thus formed by the cotton burning are far less poisonous than the sixteen ounces of exhalations from the lungs and bodies of two persons who have each lost a pound in weight during the eight hours of sleeping. For while the dry smoke is mainly taken into the lungs, the damp odours from the body are again absorbed into the lungs as well as into the pores of the skin.

Two other very important items of the healthy condition of our sleeping rooms (besides the admission of air) consist in the facts that in the morning, after leaving the couch, all the bed clothes should be aired for a few hours before being made up again, and that chimneys should never be stopped up with shavings, or with a wooden board, as is often done in the summer time. To air sheets, blankets, and other coverings, even in the bed-room, before re-arrangement, and to do this for as long a time as can be done, conduces wonderfully to the freshness and enjoyment of the bed at night—as well as to the healthy rest which is certain to ensue. These may seem trifles, but it is no harm to remember that trifles make up the sum of our comforts and existence.

It is difficult to secure a constant supply of fresh air in large towns, unless these cities are arranged and kept by the governing authorities under a proper sanitary *régime*. In London, for instance, what can be more distressing than the consciousness that at every breath you draw into your lungs you are inhaling part of the carbonic acid, waste matters, and defiled atmosphere that has served the same purpose for four millions of human beings—your fellow citizens. These elements that I have mentioned may have made a circuitous aerial gyration from Mayfair to St. Giles's—from thence to Tyburnia and Buckingham Palace. Perhaps they meandered to Ratcliffe Highway, where they have served the inhabitants as they are now serving you (though with an infinitesimal addition of oxygen) up at Kensington or Maida Hill. But this state of atmosphere would be much changed for the better if trees and shrubs were more generally planted than they are now in many parts of London, more particularly in the neighbourhoods of the model lodging-houses. We could not, of course, expect much from this in a short time, but the advantages of the plan may be predicted from what is known about the action of bad air on plants and trees, and the reciprocal good resulting from the manufacture of oxygen.

Ventilation of houses, when first attempted, was carried on through Great Britain and the continent of Europe with very erroneous ideas of the faculties possessed by the atmosphere or of the laws that govern it. Architects were for some time only floundering about in the great ocean of air that surrounds us. Square holes, covered with iron grids to moderate the current of wind, were put into the tops of some room walls, and openings of the like style were placed at the bottoms of other walls in different rooms or passages, so that one often felt as if in a wind-mill. It was supposed the foul air would go out at the top, and the pure air come in at the bottom openings. Whereas the fact soon became proved that the vitiated atmosphere, being the lighter, and trying to go out above, was met by the heavier cold air which thrust it back. This cold air being then "master of the situation," came on into the room "in a stream like water poured out of a jug upon the heads of any unfortunates beneath." At the same time, through the square opening at the bottom, whenever there was a breeze abroad, it entered with a rush, that made one feel as comfortless as if he were pottering amongst the bergs on "Greenland's icy mountains."

The plan of ventilation proposed by Drs. Drysdale and Hayworth in their work on "Health and Comforts in House Building" may do very well for those who can afford to erect palaces, or for those who need to keep themselves "covered with shawls," and to be "protected with screens." But the doctors' mode is not one that can be turned to account by such as need it most—namely, the working men whose cause was advocated at the recent Sanitary Congress in Glasgow by Dr. Carpenter. "The working man," said the latter, "must stay *near to his work*, whilst the shopkeeper and the professional man could, and did, send his family away from the smoke and foul air of the City." "Perfect ventilation," Dr. Hayworth tells us, "is not merely the infusion of fresh air into a room" (including, of course, the room in which the working man toils all day) to mix with that which is already there; it involves the removal of the already existing air and the replacement by fresh air." The laws of the generation and motion of air prove that an abundance of fresh air will destroy the foul air, and take its place—so that there is no occasion for *removals*—if the fresh air be let in freely, and its circulation be not restricted. Moreover, in the rooms devoted to artisans' labour, it is rarely that the temperature could be kept up to 60° in winter time.

The best plans of ventilation, unless for nurseries and sick rooms, are Tobin's tubes and Dr. Hincks Bird's costless window ventilation. For churches, workshops, goods stores, banking offices, printing establishments, lecture rooms, or wherever people have to assemble in crowds, nothing is better than that the windows should be on Dr. Bird's plan. This, as well as Tobin's tube, permits the air *to enter the room in a vertical column*, and thus all draught from above or below is avoided. In Health (p. 1 of the second volume) the efficiency of this system is mentioned, and the following directions given for its application:—"Raise the lower sash of the window about three or four inches; fill up the open space by a block of wood, so that the lower sash will rest thereon. This being done, it follows that the top of the lower sash rises above the bottom of the upper sash, and a current of air thus flows in between the two sashes, without draught or annoyance." I have copied out this to add that the *lower sash* must always be the *inner*

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

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*sash;** for if the *lower* happened to be the *outer* one the air should come down, not upwards. I know personally of its value, for I had all the windows of my house fitted with it during a three years' residence in Ireland. Even through the winter time, with a good fire in the room, it was rarely too cold; and the block of wood at the bottom of the sash, being movable, could be taken out in case of a storm. On the continent, especially in France, Spain, and Italy, there must be a difficulty for some time even in trying the system, as the windows in these countries open on hinges, like double doors; and house ventilation is not yet considered a matter of such importance as it ought to be all over the world.

The following is recommended as a cure for toothache resulting from hollow teeth. Into two parts of melted white wax or spermaceti, one part of carbolic acid crystals and two parts of chloral hydrate crystals are introduced, and the whole well stirred. Into this liquid thin layers of carbolised cotton wool are introduced and allowed to dry. A plug of this, slightly warmed, inserted into a hollow tooth is said to give immediate relief.

International Health Exhibition, London, 1884.—The Sub-Committee on Dress have prepared a Memorandum showing the class of exhibits which is desired for that Group. The classification includes collections illustrative of the history of dress, national costume, &c.; waterproof clothing, indiarubber, gutta-percha, &c.; dresses for extreme climates, &c.; dress for sport, hunting suits, &c.; life-saving dress, divers' dress, fireproof dress, &c. There is also a special class devoted to the comparative value of different dress materials for articles of clothing. Under it should be displayed a number of illustrative specimens to show the comparative value of different dress fabrics with reference to their warmth, their hygroscopic properties, the influence of the colour of materials in modifying the effects of sun-heat, and the like. It would be well to show under this class models and drawings illustrative of the effects of poisonous dyes (in clothing) upon the skin. Materials dyed with poisonous and non-poisonous dyes could be placed together for purposes of comparison. The Sub-Committee are prepared to arrange for a special display of materials and garments, &c., worn next to the skin. Some of these will be shown in a special annexe, to which females alone will have access, or which will, at least, not be open to both sexes at one time. As one special feature in such an Exhibition, the Sub-Committee would suggest a series of models displaying the first clothing of infants as adopted in the various countries of the world—as far as such examples could be obtained. Special attention will be given to dresses suitable for women engaging in exercise, such as dresses for mountaineering, for the moors, for swimming, for horse exercise, for gymnastics, and the like. Under the class devoted to life-saving dress, &c., should be actually demonstrated the value of certain substances used for making muslin and like fabrics non-inflammable. The various artificial starches made for this purpose should be displayed, and their use and effect demonstrated. The dress of female operatives engaged among machinery may be dealt with in this class; also special dresses recommended or in use in factories and occupations of special character, *e.g.*: dresses for lead and other factories; dresses of nurses and sick attendants; of soldiers and sailors; life-saving dresses; firemen's dresses.

* In all ordinary windows the lower sash is always the inner one. —[Ed. "H."]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

BEAUTY-CULTURE.

By Philip Foster, M.D.

SECOND PART.

"Beauty itself doth of itself persuade
The eyes of men without an orator."—*Shakespere.*

The body should be washed with hot water and plenty of soap at least once a week, and sponged with cold water and rubbed briskly with a rough towel until quite dry and warm every morning. Let it be distinctly understood that cold water is not necessarily water of the same temperature as the atmosphere. Water is really cold—that is, cold in comparison with the body—when it is of a lower temperature than the body. It should have a stimulating, not a depressing effect; we should feel warmer, fresher, and better after it, and if we do not, it is a sign that the water, whatever its temperature may be, is too cold for us, and the effect will be injurious, instead of beneficial. About 60° F., the usual temperature of water in summer, will suit most persons, but our feelings will be our best guide. In winter, then, and in summer, too, when the water in our bath is of too low a temperature to be agreeable, sufficient hot should be added to raise it to the desired point. This cold sponging is so excellent a tonic, bracer of the nerves, and invigorator of the whole system, that it is very desirable that it should not be discontinued in winter, but used regularly all the year round; and it may be, even by the most delicate, if they will but act upon this advice. Common, brilliantly coloured, and excessively alkaline soaps should be avoided.

The teeth, the preservation of which is, I need hardly say, an important element in the preservation of health, should be cleaned by brushing every part of them at least once a day—morning and night, if possible, with camphorated chalk, as a cheap and excellent dentifrice. Just as much clothing ought to be worn as comfort requires. If we have too much on, the body is weakened and rendered more susceptible to cold; if too little, the surface is chilled, and the vital processes retarded. Clothes do not give heat to the body, but keep us warm by preventing that generated within the body leaving it. Wool, being the best non-conductor, is the best material to wear next the skin. The whole of the body should be covered—lightly in summer and more heavily in winter, but always covered; and on this ground I maintain that our mode of dressing children is radically wrong. How ridiculous, too, it is of ladies, after being all day in warm rooms with the chest and shoulders closely wrapped, to go in the evening to draughty ball-rooms and theatres with these parts uncovered, and this, too, at the most inclement season of the year. Many a bright young life has been cut short—many a happy home darkened by this insane fashion.

Clothes should be easy. Tight-lacing presses upon and interferes with the free action of the lungs, heart, stomach, liver, and intestines — organs the free and perfect performance of whose functions is absolutely essential to health. It is also a frequent cause of spinal complaints, and is incompatible with an easy and graceful carriage.

If the chemise be changed at bedtime—which I do not approve of, except in very hot weather—the one put on should be of the same material and thickness as that taken off.

The "divided skirt," an attempt to provide each leg with another distinct and separate covering, is a step in the right direction. By the adoption of some device of this kind, and the substitution of woollen for cotton undergarments, women might be much more effectually, comfortably, and lightly clad than they are at present. Wet clothes should be changed on the first opportunity; and, until this can be done, we should keep moving about, as it is sitting still in them that gives cold.

To keep the feet dry and warm is a matter of the utmost importance. In rough weather, a good double-soled boot should be worn. The warmth of any part of the body depends upon the vigour of the circulation in it, and if our feet are cold, in spite of being well shod, our remedy lies in increasing the circulation. This may be done by washing them every morning in cold water — if cold occasion any feeling of numbness or discomfort, tepid should be used—and rubbing briskly with a rough towel until quite warm; taking plenty of walking exercise; and not allowing them to be compressed. This last condition is an essential one, for how can the circulation be free and vigorous in tight boots?

Expression, without which the most perfectly-moulded features soon cease to interest and attract, is the creation of intelligence, and consequently may be greatly increased by cultivation. The study of languages, although highly desirable, and in many cases absolutely necessary, is, rightly viewed, simply the means to an end, not the end itself; for it is by the acquisition of ideas, not words, that the mind is expanded and enlarged. The natural sciences must be looked to for this. However attractive a particular branch of science may prove, it should not be exclusively studied, for every lady ought to know something about the earth upon which she is placed and the natural objects by which she is surrounded. Don't be afraid of being too learned. Knowledge itself will never cause you to be disliked, although the unseasonable display of it may. Not only have ideas to be acquired, but the reasoning power must be cultivated by studying the great masters of logic—Locke, Paley, Bacon, Newton, and Johnson, and the poetic faculty judiciously ministered to.

Well-informed associates are agents in education the value of which cannot be over-estimated; and if we would add to intellectuality refinement, which gives so great and rare a charm to the face, we must be careful about the thoughts we indulge as well as the company we keep. Amiability, contentment, and cheerfulness, the controlling elements in expression, are the result of mental regulation. Consideration of the cares, troubles, and sorrows of others will assuredly take us out of ourselves, and make us sympathetic and amiable; while allowing the mind to dwell upon what we have rather than upon what we have not, and duties conscientiously discharged, will conduce to contentment and cheerfulness.

(*To be concluded.*)

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Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

THE TREATMENT OF DIARRHŒA AND RHEUMATISM.

We take the following valuable information from the interesting "Lectures on Medical Nursing" (lately reviewed in our columns), by Dr. Wallace Anderson, of Glasgow. The volume, which teems with important advice, is published by Messrs. Maclehose, of Glasgow:—

Diarrhœa is a disorder affecting the intestinal canal itself; the very part of the body whose office it is to introduce the food to the system generally. Improper food, or an improper amount of food, is a common cause; but sudden chills, warm weather, and disorders of other parts of the body are examples of what also may occasion it. In this affection the lining membrane of the bowel is inflamed and irritable, or relaxed; such a condition requires a diet that will be bland and astringent. Milk, especially boiled milk, has to some degree these qualities naturally, and it is usually the basis of whatever diet is prescribed. The addition of equal parts, or perhaps a third, of lime water makes it more astringent. A little isinglass, dissolved first in water, and then added to the milk, becomes somewhat of a protective to the irritable bowel. A similar and very good preparation is one quart of milk mixed with the whites of three or four eggs beaten to a froth. Sometimes the milk will not agree, and it will be necessary to substitute simply the same quantity of water sweetened with a little fruit syrup of some kind.

A less common, but often most valuable kind of diet, particularly in the diarrhœa of children, is that of raw meat, a method of treatment that comes to us originally from Russia. Its preparation will, of course, devolve upon you; it is quite a simple matter. What you want is to leave all the shreddy fibrous tissue, and get only the soft pulp of the meat. This is done by taking a small piece of lean, juicy meat, and scraping it with a knife in one direction. Each stroke of the knife will bring away on its edge some of the soft pulp, and this can be continued till nothing but shreddy indigestible fibre is left. A little salt may be added to the soft meat, which can then be spread on thin toast or biscuit. For a child of one year old it is usual to begin with 1 oz. in the day divided into three parts. If it is necessary to disguise it in some way a little jelly may be added.

I conclude the consideration of this disease with an important caution. Remember that in cases of diarrhœa you are not to give on your own responsibility that never-failing meal for invalids—a basin of beef-tea. In any such condition of the intestinal canal beef-tea is decidedly laxative. It is sometimes so in healthy children of one or two years of age.

Rheumatism.—There is little to be said about diet in this affection, and it is more as a connecting link than from any special importance attaching to it, that I make the remark that we usually avoid giving animal food in this disease. The great point in the care of rheumatism, I mean particularly acute rheumatism (in which besides the pain there is high fever), is the avoidance of anything that will chill the patient. To emphasise this, one is almost justified in saying that here *warm* air is more important than fresh air. The least exposure to cold may greatly

Health, comfort, and economy promoted by Chappuis' Reflectors, 69, Fleet-street.—[Advt.]

aggravate the disease. If details are left to you and the case is at all severe, you should see that the patient lies between blankets, and that he wears a flannel night-dress. One, or more likely several, of his joints will be swollen and painful, and for that you may be ordered to apply fomentations to the inflamed parts, or perhaps a blister. The method of applying these and other external remedies will be considered later.

Further, you must remember that the disorder is one of the whole system, and therefore the local joint affection passes readily from one to another—for example, from the knee to the wrist, from the elbow to the ankle. And so it will be your duty to see that no arm or even hand becomes exposed (as might readily be done in order to read a newspaper or book) till the physician's permission is obtained. A sour smelling, profuse perspiration is a characteristic symptom of the disease which often causes considerable discomfort. Should this be the case you may dry the skin with a warmed towel, but it must be done quickly, and with as little exposure as possible.

It is right that you should know also that the great complication of acute rheumatism is heart disease. You must at once, then, report any sudden rise in temperature, complaint of oppression over the heart, palpitation, or similar symptom, which often indicates the beginning of cardiac mischief.

There is one point connected with a special treatment that you should know. A recent and much-approved remedy in rheumatism is salicylic acid or salicylate of soda, and it is often given until its effects on the system, apart from its influence on the disease, are observed. These are sickness, deafness or ringing in the ears, giddiness on sitting up in bed, and such like. In some cases it may be left to you to continue giving the medicine till one or other of these effects is noticed.

Lastly, you must always remember the great liability the disease has to relapse or to return. You will be careful, therefore, to carry out to the letter all directions as to the avoidance of draughts, exposure to cold, &c., even when the patient appears to have quite recovered.

Water and Disease.—Ague, commonly known as fever and ague, is a disease that appears to be most frequently transmitted through the air, but we have evidence that water is capable of conveying it also. This has from very early ages been believed, for we find it mentioned by Hippocrates that drinking marsh-water produced spleen-disease, which is always associated with ague. In India a similar belief has always existed among the natives; even the drinking of river-water containing vegetable matter from marshy districts has appeared to produce ague in places which were otherwise free from any suspicion of marsh-poison. Dr. Smart has pointed out the same thing in the mountainous regions of North America. A very interesting case occurred a few years ago at Tilbury Fort, when the artillery quartered there were supplied with so-called rain-water, collected in underground tanks dug in the marsh. The men suffered severely from ague so long as they used the water, but the disease disappeared on other water being taken into use during the repair of the tanks. When the troops returned to the use of the tank-water, the disease broke out again. The water was analysed, and found to be very impure; in fact, the water from the marsh had soaked in in large quantities, and been drunk by the men under the belief that they were being supplied with rain-water. Although this is an occurrence not likely to be common in this country, it is importing as indicating possible dangers to be guarded against.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE CARBONIC ACID OF THE ATMOSPHERE.

An important paper on this subject, written by E. H. Cook, —dealing with the gas which, as everyone knows, is breathed out from our lungs—has recently appeared in the *Philosophical Magazine.* Taking the polar diameter of the earth as 7,899 miles, the equatorial diameter as 7,925·5 miles, and the height of the ordinary atmosphere as 26,214 feet—nearly five miles—the cubical contents of the atmosphere is found to be 591,647,337 cubic miles, or in round numbers, 592,000,000 cubic miles. If the average amount of carbonic acid in the atmosphere (*i.e.*, ordinarily pure air) be taken as 4 vols. in 10,000, the total amount of carbonic acid is 236,800 cubic miles, and the total weight 4,287 billions of pounds, or 1,913,685,908,480,000 kilogrammes. These numbers differ considerably from those given by Dumas and Baussingault, and from that given in Roscoe and Schorlemmer's "Chemistry." The first of these is nearly forty per cent., and the second about thirty-three per cent. too high.

Recent investigations, however, show that the proportion of carbonic acid in the atmosphere is not so high as 4 vols. in 10,000. Fithbogen and Hasselbarth found 3·4 vols. in 10,000; Farsky, 3·4 vols.; and Reiset, 2·942 vols.; and if the mean of these be taken, the total weight of the carbonic acid in the atmosphere is nearly 1,545 billions of kilogrammes. The average amount of coal raised annually in the world during the last three years is about 280,000,000 tons. Assuming that this contains seventy-five per cent. of carbon, ten per cent. of which is thrown away with the ash, 182,000,000 tons of carbon are annually converted into carbonic acid, which gives a daily production of 1,800,000 tons, or nearly 1,800,000,000 kilos. Assuming that one-third more is produced by the combustion of wood, peat, oil, &c., the total daily production by combustion is 2,400,000,000 kilos. The present population of the world is about 1,500,000,000, and each individual produces on an average a kilogramme (a kilogramme is 2 204 lb. avoirdupois) of carbonic acid in twenty-four hours. Assuming that twice as much carbonic acid is produced by the respiration of the lower animals as by man, the total amount produced by respiration is 1,500,000,000 kilos. per day. The amount produced by the decay of animal and vegetable matter may be taken as equal to that produced by the respiration of man, and the amount sent into the air from subterranean sources may be fairly assumed to be five times as great as the total amount derived from all the other sources together. This gives about 40,000,000,000 kilos. per day. Adding all these quantities together, it is found that the total amount of carbonic acid daily added to the atmosphere is at least 50,000,000,000 kilos., from which it follows that if no compensating influences were at work, the proportion of carbonic acid would be doubled in about one hundred years.

The causes which remove carbonic acid from the air are the absorption of this gas of carbon by green plants by day, and absorption of the acid by inorganic chemical action. In the first case alone is oxygen returned to the atmosphere; in the other case the carbonic acid is absorbed as a whole. The total area of the land surface of the globe is, according to Saunders, 57,600,000 square miles. Of this, 8,200,000 square miles are in arctic and antarctic regions, thus leaving 49,400,000 square miles on

which vegetation might flourish. A considerable portion of this area is, however, occupied by barren mountains, cities, and rivers. Estimating the total area of leaf surface at 50 per cent. of the area of plant-bearing land, it follows that 24,700,000 square miles, or 63,973,000,000,000 square mètres (a square mètre is 10·76 square feet) of leaf surface are engaged in the work of removing carbonic acid. Since each square mètre of leaf-surface decomposes about 1 litre of carbonic acid per hour, it follows that 63,973,000,000,000 litres (a litre is 61·027 cubic inches) of the gas are decomposed every hour. Taking into account the fact that sunlight, on the average, lasts only ten hours per day, and allowing 25 per cent. for diminution of the action during winter, the average amount of carbonic acid decomposed per day is 479,000,000,000 kilolitres (a kilolitre is 220·09 gallons), or more than 900,000,000,000 kilos. A considerable portion of the carbon thus removed is, however, returned to the air when the leaves decompose in the autumn; and allowance must also be made for the fact that some plants give off carbonic acid in the dark. On this point, however, there are no data on which to base any calculation, and the evolution of carbonic acid by the nocturnal respiration of plants may be much greater than is usually supposed. From the numbers given it would appear that the vegetable life of the globe is of itself sufficient to maintain the purity of the atmosphere.

The removal of carbonic acid form sea-water by low forms of animal life takes place on a gigantic scale, but the carbonic acid thus removed exists in the sea and not in the atmosphere, and a very large proportion of it must be derived from submarine volcanic eruptions. In all probability the influence of this action is felt only after many years, and so far as the atmosphere is concerned, it cannot be compared to plant life in point of activity.

These calculations seem to show that the causes which remove carbonic acid from air are more powerful than those which add the gas to the air. Its proportion must, therefore, be gradually decreasing, but there are no trustworthy data on which to base any calculations of this point. As to the source of the enormous quantities of carbonic acid already fixed in the form of limestone, we have no knowledge. Either at one time the atmosphere surrounding the earth must have been much richer in carbonic acid than it is at present, or, as Sterry Hunt supposes, there must be a universal atmosphere similar to our own, from which the carbonic acid now fixed in the earth's crust has been derived.

Treatment of Warts.—It has been stated that MM. Champonière and Foussagrenes, two French doctors, have cured warts by the internal administration of 12-grain doses of calcined magnesia, but the *modus operandi* of the medicine they could not explain.

Fruit-eating must obtain more largely than it does, not as a luxury, but as a hygienic measure. Our lives are becoming impaired, and meat-eating is a luxury which is incompatible with many generations without deterioration of the viscera; and consequently our dietaries must be modified accordingly.

As regards the interior of houses, plaster, whether on brick or lath, is exceedingly porous, and permits of a ready diffusion of gases; and a wall merely whitewashed or coloured with distemper is better in a sanitary point of view than one that is covered with oil paint, which becomes by this process practically impervious to the passage of gases. Wall-papers are probably not so bad in this respect as oil paint, but are certainly inferior to distemper or whitewash.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

(FIRST PAPER).

"What a magnificent bust that girl has!"

"Do you think so, Charles? Her waist is too large."

"Not at all, Anne, for her fine pair of shoulders."

"Do you admire broad shoulders in a woman?"

"Not if they have a masculine appearance, but that young lady has not broad shoulders, she has a lovely figure, well-proportioned."

"Oh, I see, Charles, you like tall, stout figures."

"I am not partial to any particular size, if the figure is well-proportioned throughout. I always look upon a slim, flat-chested figure as a defect in natural growth, and a pinched-in waist, a crime."

"Why, I always thought your sex liked small waists."

"We do if they are naturally so, but to see nature tortured is painful to our feelings. It was only the other day, when walking down the Cromwell-road, I found myself behind two ladies going in the same direction. To one Nature had given full development. But her walk—how horrible! A full bust and fine pair of shoulders, and a pinched-in waist! Natural beauty was destroyed when fashion stepped in, for with each step she rocked from side to side, giving the appearance to her bust (which she kept perfectly erect from the waist upwards) as if poised on a swinging pendulum. Imagine to yourself an hour-glass, one half erect and steady, and the lower half rocking to and fro, and you have the appearance of her gait. What pain she must have suffered! I momentarily expected to see her part in two at the waist. The torture she must have endured was too painful to my feelings. I had to step out and walk before them. If she had not had that unnaturally pinched-in waist, her movements would have been entirely graceful, and her figure would have won my admiration."

"You do not believe in corsets, then, I suppose Charles?"

"Where they form a material support to the body, as in the case of a mother, I think they are useful—if they are not turned into an instrument for the self-infliction of physical discomfort—but for young girls, I think the natural form of the figure is most charming."

"Oh! How horrid! Why you would have us as broad at our waist as at our shoulders—like some awkward, overgrown school-girl of fourteen."

"That rests with themselves. If they do not choose to assist nature they have but their own indolence and prejudices to thank for such stunted development—such as you see nine out of every ten girls you meet exhibit in their figure."

"What would you have us do, then? You would not like to see us run races, jump ditches, fly hurdles, or exhibit an agility like some acrobat on the trapeze?"

"I would have all girls go through some form of physical exercise while they are growing. Certainly I do not want to see them coming into the field to compete against professional athletics nor gymnasts. But for their own perfect development and health, and health of the future generation, it is necessary they should physically

train their bodies so as to possess full power over every limb and movement."

"Why, Charles, I verily believe you would have girls to be an army of amazons."

"Oh, dear no, not at all. There is no necessity to carry such exercises to extremes, nor to develop muscles and sinew in the limbs 'hard as iron bands.' For there are many calisthenic exercises of a gentle character which would, when practised, increase the lung power, lithesomeness, and gracefulness of the body."

"I wish you would not use such long words, Charles. What is the meaning of calisthenics?"

"It is a term applied to exercises for strengthening the body, and giving ease and elegance to the movements of the limbs, and is usually, though not necessarily so, confined to the exercises performed by girls, in a similar manner that of gymnastics is to boy's exercises, although the latter term, gymnastics, is really the name of the system by which disease is treated, and health maintained, through the regular practice of active exercises."

"Thank you for your pedantic explanation. I knew I should get a rebuff for my ignorance, but I think you are wrong about increased 'lung-power.' A woman does not want to have a stentorian voice, and be able to shout like boys just let loose from school. A woman's voice should be soft, low, and gentle."

"Pardon me, Anne; let me explain. The other day you were wishing you had such full command over your voice as Miss Johnson has. You have always bewailed your inability to sing in a powerful, rich voice, and it is within your power to possess such a voice."

"How?"

"By allowing free movement to your shoulders and the muscles of your chest."

"You forget, Charles, when I sing much I have a sharp pain in my side, and feel very exhausted."

"No wonder, with that wasp-waist. Cease to lace in, and take exercise for the chest, and you will no longer suffer such inconveniences."

"Now, you are cruel. I won't listen to you."

"Self-willed, as you always are. Cruel or not, it is the truth; but I forgot that truth is never very palatable."

"Perhaps, Mr. Cynical, you will give Ethel some of your wonderful advice, and tell her how to cure her awkwardness and become graceful in her movements. To do so, I suppose you would put her through a course on the parallel bars or exercises on the trapeze. I've often heard you praise Miss Cameron as the acme of gracefulness; yet she never had a single lesson in what you call physical exercise."

"Perhaps not. Some persons are naturally graceful in all their movements."

"And some naturally awkward, I suppose you would say?"

"Certainly; but such natural awkwardness can be easily overcome by artificial means that are within every girl's power."

"Look, Charles! There is one of your 'fully developed women.' Perhaps she has had a physical education. But look how she walks!"

"No wonder, with her toes cramped together and her boot-heels halfway under the bend of her foot."

"Sarcastic again. Yet she has a 'magnificent bust and a fine pair of shoulders.'"

"Disfigured by an unnatural hump dangling behind!"

"There, the lady now passing has no cramped toes nor high heels. Yet she is not walking gracefully!"

"I seldom do see a woman walk gracefully, flat heels or high heels."

"Why?"

"Because they have never learnt how to balance the body on the stationary limb, when walking; and they have never practised the 'goose step.' If they walk fast, it is at a half-trot, head and shoulders jumping up and down, and limbs thrown out in a jerky manner; and if they walk at all gracefully, it is at a snail's pace that is more harmful than healthy."

"What is the 'goose step,' Charles?"

"A term applied to the exercise of balancing the body on either of the lower limbs alternately, as the opposite foot is raised from the ground."

"Perhaps that gentleman across the road walks to perfection. I am sure he has had a physical training?"

"Who?—that 'masher!' He drags each leg after him as if it were loth to leave the pavement. There is no grace in a movement that looks as if the person were too ill to walk."

"Now, Charles, don't be rude again. I was about to ask you how I can obtain command over my voice."

"By going through a few simple exercises that will strengthen your breathing apparatus and movements."

"That seems a learned declaration!"

"Well, I know you detest long scientific terms. If I spoke to you of thorax, larynx, intercostal muscles, &c., they would be but words to you."

"But where am I to learn such exercises? There are no public gymnasia for young women that I know of?

"Oh, yes, there are a few; but I could teach you such exercises as you require."

"You?"

"Yes."

"Oh, that would be nice! Will you? Suppose we set up a calisthenic class. I'll ask Ethel, and Maud, and Jenny, to form one. What do you say?"

"I am most willing, but there is one thing I must ask you, to give implicit obedience to my instructions."

"But don't we want a special dress, with belts and jerseys?"

"Well, not for the first few exercises. Such a dress as that exhibited by Dr. Holms, at the Rational Dress Exhibition, will suit; but I have another costume which I will give you the pattern of to get made up to meet the requirements of the later exercises."

"When shall we begin?"

"This afternoon if you like."

"You are a good brother, Charlie, to devote so much time to your sisters. I'm sure Maud and the rest will welcome the idea; for we want a novelty, we're tired of doing nothing."

"Now, Anne, I don't want you to look on it as a mere novelty, to be given up when tired of it and the novelty is worn off. You must be in earnest."

"I think I can guarantee that we shall attend faithfully to all your rules."

"Very well—till the afternoon, adieu!"

Disinfectant Blue.—A laundry blue with disinfectant qualities is made by mixing together sixteen parts of Prussian blue, two parts of carbolic acid, one part of borax, and one part of gum arabic into a stiff dough. This is divided into balls of small size, each ball being dipped into gelatine or gum to retain the carbolic acid.

Glycerine in Fevers.—Dr. Semnola speaks highly of the following mixture in the denutrition of fever patients: Pure glycerine, 30 grammes; citric acid, 2 grammes; distilled water, 500 grammes. One or two tablespoonfuls every hour. Glycerine he considers an economising agent (*agent d'épargne*), and a course of cod-liver oil, and may prove valuable in the treatment of fevers of prolonged duration, such as typhoid, in allaying the heat-wasting.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

The Field of Disease. A Book of Preventive Medicine. By Benjamin Ward Richardson, M.D., F.R.S. (London: Macmillan & Co.) 1883.

Few men have lived a more industrious life, and still fewer have spent so many hours and days in health-work of a public kind, undertaken in a solely philanthropic spirit, than Dr. Richardson. He is a many-sided man in the matter of health-work, and is equally at home when discussing such an abstract topic as the "Causes of Felicity," or when devoting practical attention to some concrete branch of the healing art. The large experience acquired in the course of many years of health-work eminently fits Dr. Richardson for the task of exponent of the popular side of preventive medicines. There is a wide difference, not always recognised by the public, between the powers which fit a man for writing a technical manual, and those on which the successful production of a popular treatise depends. The popular writer of the highest class is a man who, in addition to a full and ripe knowledge of his subject, possesses the art of placing information in a readily understood fashion before his readers. He must be at once plain and correct. He must, above all things else, take care that he does not sacrifice correctness of scientific detail to the popularisation of his ideas, and he must likewise write so that he may attract those foreign to the topic towards a perusal of his pages.

Now, Dr. Richardson appears to us to exhibit in typical fashion those characteristics in which the features of scientific knowledge and the art of popularising science are combined. His present book—a bulky, clearly-printed volume—testifies to his success in making a technical topic understood by the people. He writes for the "intelligent reading public, who, without desiring to trench on the province of the physician and surgeon, or to dabble in the science and art of medical treatment of disease, wish to know the leading facts about the diseases of the human family, their causes and prevention." Such are Dr. Richardson's prefatory words. They express the gist of his work and labours, and show us the aims of the volume he has produced. We may, however, dispute the advisability of his stopping short at the "causes" and "prevention" of diseases. It is impossible in the case of the intelligent public who read Dr. Richardson's book not to concern themselves in some measure with the question of disease-treatment. Even the discussion of "prevention" is infringing upon what Dr. Richardson might reasonably regard as a purely medical province. We are no believers in the idea that an intelligent man or woman is any the worse for knowing certain plain, broad, and general details respecting the treatment of disease. To argue otherwise is a piece of professional special pleading which undervalues and underestimates the intelligence it would rely on, as interesting itself in the causes of disease. We regard it as a perfectly possible thing that educated men and women may acquire the broad elements of medicine and surgery, and of the principles on which diseases are treated, as part of their education. To-day, ambulance lectures teach the public how to treat wounds, to bind up fractures, and to administer remedies in cases of poisoning. There is no more cogent reason why the public should not know the general principles of disease-treatment, than for their remaining ignorant of ambulance details; and, so far from usurping in any sense the work or functions of physician or surgeon, we are convinced that the spread of such information would tend to make the public at large sympathise more deeply, and assist more readily, the humane labours of the medical profession.

Dr. Richardson's work will prove both interesting and instructive to the general reader. He will be led by the author's descriptions into the great "field of disease," occupied by its hundreds of varied ailments, each affecting the body in its own special fashion, and each presenting the physician with its own phases for study. Throughout the work, the dominant tone, so to speak, is "prevention." Dr. Richardson is never weary of enforcing the truth of the saying that "prevention is better than cure." He shows how diseases are generated; how fevers come; how this ailment is begotten; and how that springs from amidst special conditions. The first two books or parts of his work are really preparatory to the third.

Classifying diseases into "general diseases," or those affecting the body at large, and "local diseases," or those affecting a special part or organ, the author gives a clear summary of the nature of diseased or morbid actions. His book, in respect of its opening chapters, is a capital corrective to that by no means obsolete teaching which regards disease as the product of unknown conditions, which looks on a fever as a mysterious "visitation"—to use the stereotyped phrase—and which regards ailments, the causes of which are not clear to the popular mind, as the work of supernatural agencies. As a corrective to such notions, we repeat, Dr. Richardson's book will serve at once the cause of science and of common sense. The microscope has been at work for years, tracing this fever to its source, and that to its origin. We have been shown how foul conditions of air breed the germs of typhus fever, and how the malarious exhalations of swamps foster ague. Even consumption is being ranked with the diseases which date their origin from living particles, or "germs"; and thus the field of disease, from presenting us with an ill-assorted, mysterious series of ailments, is being parcelled out into its cultivated "plots" wherein the busy toilers of science are each working to increase the knowledge that prolongs life and secures length of days to our race.

That part of Dr. Richardson's volume which deals with "The Origins and Causes of Disease," and that which takes for its subject the "Practical Summary of Preventions of Disease," form together the most interesting portion of the work. In a fair and candid summary of the "Zymotic Causes of Disease," or of those causes which produce the well-known infectious and allied disorders, Dr. Richardson lays before the reader the chief facts, which seem to show that "germs," mostly of lower plant nature, breeding and multiplying within human tissues, produce each its own and special ailment. It is pretty well known that Dr. Richardson, personally, does not favour this theory of disease, which he calls the "parasitic" theory. His own view of such diseases he terms "the nervous hypothesis" (or theory) "which traces the zymotic affections to diseased secretions produced under nervous derangement in the body itself." In supporting this latter theory, Dr. Richardson has undertaken a task of no mean order; and it is a labour which, moreover, we cannot regard as susceptible of easy demonstration. Our author seems to regard the poison of disease as merely an altered or "modified secretion;" but the point which is insusceptible, in our opinion, of direct proof is exactly that which contains the gist of the whole matter, namely, the nature of the actions or conditions which modify the secretion. On Dr. Richardson's theory, as we understand it, these actions or conditions are chiefly represented by altered nervous states, but such a view leaves untouched the further question,

"What produces the nervous condition necessary in such case for the alteration of the secretion?" It would seem that we have still to fall back on some diseased material affecting the nerve centres, and through them capable of affecting the frame in each special case. But Dr. Richardson himself expresses his views so lucidly that in this matter we may let him speak for himself:—"On the ground," says our author, "that the virus, or poison matter of disease, is always from a secretion, I have been led to the conclusion that under certain influences affecting glandular action, *the virus may be made to originate directly through nervous impressions without the necessary intervention of an infecting particle.*" The special difficulties of Dr. Richardson's position are those, firstly, of showing the inactive characters of the microscopic germs (*bacilli*, &c.) which accompany disease, and which are capable of producing each its own disease when injected into the system of a healthy animal; and, secondly, of determining the, at present, somewhat shadowy character of the "influences" which affect the nervous centres, and so produce the diseases in question. It certainly seems a much simpler view of matters to assume that infectious diseases arise each from its own living germ; that the symptoms of the disease are the result of the development of that germ or germs into countless others within the system; and that the nervous or other "influences" of Dr. Richardson are simply the secondary results of the action of such germs. These views receive support from recent microscopic inquiry, and are accepted by most of our leading physicians and biologists as explanatory of the causes and origin of infectious diseases.

A highly-interesting section of Dr. Richardson's book is that which deals with "Industrial and Accidental Causes and Origins of Disease." A long and interesting list of ailments induced by the conditions under which certain trades and professions are pursued is given. Here we learn how the needle-grinders, potters, and others suffer from consumption; how cigar-makers are liable to irregular heart-action and indigestion; how the match-makers suffer from bone disease; how butchers are liable to contract poorness of blood and bronchitis; and how various other trades are similarly marked by their characteristic forms of disease. We learn that 111 butchers die to a mean of 100 of those who follow sixty-nine other occupations; and this high mortality is to be traced to the constant dampness of their surroundings, and to the consequent development of rheumatism, bronchitis, and other ailments. Again, 108 drapers die to seventy-six grocers; the latter probably owing their longer life to the freer atmosphere and more active work in which they are engaged. A vast amount of thought is suggested by these and allied considerations. They lead us to bestir ourselves in the matter, not only of the improvement of our surroundings, but also in legislating so that, as far as is practicable, insanitary conditions may be abolished in the practice of unhealthy or dangerous occupations.

The present work thus stands out prominently amongst books on popular science, not only by reason of the high importance of the subjects of which its author treats, but also from the interesting fashion in which he has collected, arranged, and described his facts. The book is one which teems with instruction of a kind which, when laid to heart, is much more likely than any other form of knowledge to incite people to study the laws of health, and to practise diligently those things which make for a healthy life. It is not by fear and terror that the modern sanitary reformer seeks to win adherents to the cause of healthy living. It is rather by showing us how much we may and can do to prevent disease that he would influence our lives and work. And in the instilment of such thoughts and views as part of a great national policy of health-pursuit, Dr. Richardson's work will, in our opinion, prove itself an ample aid, and supply information of the kind which may best be denominated "saving knowledge."

Sanitary Appliances, Etc.

COOK'S COMBINATION CINDER BIN AND SIFTER.

This is an ingenious arrangement, likely to prove of high practical value in household sanitation. There is no graver question for the householder than the disposal of the waste matter of the house, and the modern "dust-hole"—extant in cities where the refuse is not daily carted away by municipalities—will be regarded by sanitarians of the future as a proof of the backwardness of "the age we live in." Mr. Cook has contrived a handy bin on wheels, occupying any convenient position in household premises. A front lid being opened, gives access to a "cinder-sifter," which permits of sifting and removal of the cinders with great ease. When filled, the bin is simply wheeled off the premises by the dustman, and emptied of its contents by means of a sliding back. The price of this bin varies from £3. 15s. to £5. 15s. It may be obtained from the patentee, Mr. Cook, of 34, Snow-hill, London, E.C.

THE ESSEX FLOUR AND GRAIN CO.'S PREPARATIONS.

We have examined a sample of the Pure Flour of Lentils made by the Essex Flour and Grain Company, of Liverpool-road, London, N., and find it to be a pure and highly nutritious form of lentil food. It contains a high percentage of the nitrogenous matters (or flesh-forming foods) for which the lentil tribe are famous, and in the finely divided state in which the Essex Flour Company's preparation is presented digestion is rendered easy and assimilation rapid. This lentil flour can be mixed with ground rice or ordinary flour or other materials, and may in this form be made the basis of many excellent dishes. It is superior in purely nutrient qualities to the ordinary corn-flours.

From the same firm we have received a sample of "The Empress Currie Powder." This latter is an excellent article, and forms a valuable adjunct in culinary operations.

ROWLANDS' MACASSAR OIL.

We have received a sample of this well-known hair preparation, which is now manufactured in its original red colour, and is a golden fluid. It is not a dye, and the change of colour has been produced simply to suit the wishes of many persons who prefer a colourless hair-oil. From a chemical examination of this oil, we are able to speak with confidence of its high purity. It contains no deleterious matter, and is a preparation which is calculated to be of service in stimulating the growth of hair and in aiding recovery from hair-diseases in which there has existed an impairment of the vitality of the hair. At present there are a large number of hair preparations in the market which contain ingredients of doubtful nature. "Rowlands' Macassar Oil" is a pure and harmless preparation, compounded of excellent materials, and well-adapted for the toilet-purposes of old and young alike.

Wasp Waists.—We are not denying the necessity for some close-fitting garment as a support to the body, and an improvement to the figure; people who refuse to wear any corset at all look very slovenly; but we must protest against a machine that, pretending to be a servant, is, in fact, a tyrant—that, aspiring to embrace, hugs like a bear—crushing in the ribs, injuring the lungs and heart, the stomach, and many other internal organs. The Eastern lady who, pitied for her dull harem life, said she thought that English wives were far more unfortunate, since their husbands (as she innocently thought) "locked them up in a box," was not far wrong. And all to what end? The end of looking like a wasp, and losing the whole charm of graceful human movement and easy carriage—the end of communicating to all who, like artists and medical men, have studied the mechanism of the frame, an over-all-ish sense of deformity.—*Mrs. Haweis.*

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

CHILDREN'S DRESS.

Sir,—Surely the conclusion arrived at by Miss Ballin as to the wearing of stays is not very commendable from a common sense point of view. She seems to think that, because skirts are heavy and fatiguing, it is, therefore, well to adopt another unhealthy garment—viz., a corset—to make them bearable. Two wrongs do not inevitably make one right, and the logical inference from the fact that skirts are uncomfortable, would be that they are an unsuitable form of dress, and should be altered to one which is more convenient.

I cannot agree to the theory laid down that those who do not wear corsets acquire a confirmed stoop. All stays contract the waist more or less. If they did not, they would not distribute the weight of skirts more evenly than bands. This contraction increases the slope towards the small of the back, and may give an impression of greater uprightness, but so far from really improving the carriage, they have a tendency to make people round shouldered, from the habit of leaning forward on the front steel. However, women's dress at present is designed to fit a pair of stays attached to a bottle-shaped wire stand, and the human being who is to carry it about is expected to alter her form so as to get into it. So long as women are content to do this, healthy and convenient clothing is impossible, and discussing it without advocating some completely different system seems of little use.

I must, however, mention that I read with astonishment, in Miss Ballin's otherwise excellent paper, the suggestion that little girls' dresses should be made to reach down to their ankles. Any advantage gained in the warmth of such a dress would be more than counterbalanced by the injury caused from the fatigue to the child when running about by the resisting weight or pressure against the legs of these long skirts. Any one who contrasts this proposed cumbrous dress with the graceful and convenient "Kindergarten Frock" just introduced by Miss Franks, of Mortimer-street, will have little doubt which is the more truly comfortable and hygienic dress for children.—I am, sir, yours faithfully,

119, Cromwell-road, S.W., *Jan.* 25. F. W. Harberton.

Sir,—Men may well be sceptical as to the reasoning powers of women when they read such an answer as that given by Miss Ballin to Mr. Maxwell relative to proper feet covering. Miss Ballin recommends for young girls a boot so constructed as not to allow "the foot to become deformed by spreading." Mr. Maxwell asks in reference to this advice, what are Miss Ballin's ideas as to the usefulness of a boot in preventing deformity of the feet? whether she thinks that people who do not wear boots or shoes at all have deformed feet? and whether she thinks the application of any tight-fitting article of attire, such as corsets, prevent young ladies' figures from becoming deformed? Miss Ballin's reply—answer it can hardly be called—is a curious study in many respects, but what she supposes to be an answer is, that as the feet have to bear the whole weight of the body, while "the figure" has not, *therefore* the feet ought to be prevented from becoming deformed—*i.e.*, from spreading.

It does not seem to have occurred to Miss Ballin that the fact of the feet having to sustain the whole weight of the body entirely proves Mr. Maxwell's point and disproves her own. As the feet have to bear all the weight of the body, it is necessary for them to spread in order the better to sustain it, and as this spreading of the foot when treading is "the wise provision of nature" for the better support of the body and its locomotive powers, this same spreading cannot be a deformity, but, on the contrary, the foot which has lost this power is alone the deformed one.

During my residence in New Zealand I had full opportunity of seeing hundreds of natural feet, which had never been cramped by shoes or boots; deformed they certainly were not, but the shape of the foot, with its broad, natural "spread" across the toes, was very different from that of the shoe-wearing peoples.

With our unnatural taste as to the shape and size of both feet and waists, how can we rightly judge which is the deformed and which the symmetrical foot or waist? Let us apply, as a test, Miss Ballin's own quotation, "In bringing up a child, think of its old age." And I think the natural foot and the natural figure will last best both as to beauty and as to health.

I agree with Miss Ballin as to the greater number of stooping girls to be seen nowadays. And there are two very patent causes to account for it. One is the mistaken advice followed by many women, of putting all the weight of petticoats on the shoulders. The weak backbone, and undeveloped muscles, not able to sustain the burden put upon them, droop and collapse. The backbone becomes curved and the chest sunken. Another reason is, that we are giving our poor girls too much higher education of the mind, and too little higher education of the body. No wonder they stoop, poor things, when their vital power is sapped to work their brains, while no invigorating games are allowed them, which would relieve the constant mental strain, and enable them to regain the physical energy which mental labour robs them of.

For heaven's sake let us get women with healthy vigorous bodies and a healthy, unfettering dress, before we pursue further this system of brain torture.

Dr. Clouston's warning on this head comes none too soon. I greatly fear me that if women teachers of women study the question of dress and health, from no higher standpoint from that which Miss Ballin takes, such an institution as that so nobly bequeathed to them by Mr. Holloway will prove a curse instead of a blessing. E. M. King.

Hon. Sec. Rational Dress Association, 9, Trinity-road, Folkestone.

BUCHAN'S PATENT INDUCTED-CURRENT FIXED VENTILATORS.

Sir,—In the notice of the above appliances which you were kind enough to honour me with on page 236, it is stated that the No. 7 style, Fig. 4, was being applied on the new hospital at Morningfield, Aberdeen. It is the No. 9 style that have been put on there. The No. 7 style were used for the Alloa Volunteer Drill Hall, 27 in. size, and the architects, Messrs. John Melain & Son, Alloa, write me to-day that "they are the best design of roof ventilators we have yet seen, and we understand they have worked well."—I am, yours respectfully, W. P. Buchan.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.

We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.

GENERAL.

Talisker.—Probably one fourth; certainly not more.

A. C. X.—There is no such substance. Have you not mis-spelt the name?

Andersonian.—The College has no power to give degrees; only a chartered University can do so.

B. Olston.—Teeth grow from the gum, and the gum is only a modification of the skin. Hence teeth are related to hairs and nails, and not to bones.

C. Cargill.—You will find the full account of Mr. Syme's experiment on the periosteum (quoted by Dr. Wilson in his lecture on the Skeleton) in Syme's "Principles of Surgery."

X. O.—We suspect there must be some hereditary tendency. Read Ribot's "Heredity" (Kegan Paul, Trench, & Co.), for a full account.

Bene.—"Chapters on Evolution," by Dr. Andrew Wilson (Chatto & Windus), contains a popular account of the information you require.

York Road.—Unsuited for Health.

George R.—Yes; there is such an ailment as "Caisson-disease." It was carefully described by Dr. Andrew Smith, of New York. It is also called "coffer-dam" disease, and affects men employed in sinking the great caissons, or tubes, used in bridge-building. It is marked by pains in trunk and limbs, and by paralysis, &c., and is due to the increased atmospheric pressure under which the men work. See Richardson's "Field of Disease," page 538.

A. A. Thomson.—Thanks for note. Mistake so obvious as not to need correction.

J. E. Lush.—Probably Mr. York, of Lankester-road, Notting-hill, W., will be able to supply you with the slides you require, but there is no complete set on the skeleton that we know of. We might recommend you to purchase Dr. Wilson's "Standard Physiology," price one shilling, published by Messrs. Chambers, as a cheap elementary work, such as you require.

Arthur E. Hawkins.—The book by Pye Chavasse might suit you. Messrs. Cassell & Co. also publish a reliable work, entitled the "Ladies' Physician," which might suit your purpose.

Medicus.—See recent numbers of *Lancet* for letters on capital punishment. There is no volume we know of which will suit your purpose, but you might find in "Hansard's Debates" reports of the speeches by Mr. Bright and others in Parliament advocating the abolition of capital punishment.

SANITARY.

Cecil.—Have the flooring taken up, and be sure there is no leaking drain beneath your room.

A. Armsley.—A very good book; none better for your purpose.

J. Benson.—1. Try what the removal of one or two bricks will do. 2. Increase width of fireplace.

G. C. A.—We never heard of the invention. Can you send us details?

Birmingham.—There is a firm of that name; but we are not acquainted with their manufactures.

Alpha.—The "burners" in our hands act well.

Bruce.—1. The statement will be found in Parkes's "Hygiene." 2. See "Notes by the Way," No. 42.

J. S.—1. We should recommend you to raise the bottom sash of the window three or four inches, and to fill up the space by a block of wood, on which the lower sash thus rests. By this plan fresh air passes in between the two sashes, without draught. See "Sanitary Gossip" in present number. 2. The Bramah Closet is a good one, but you had better read the articles published in Health, under "Healthy Houses," on "Closets."

MEDICAL.

Eaton Place.—Let your food be very light for a time; live mostly on soups, milk, &c., and take little solids for some days. Brand's "Beef Essence" and similar preparations may be recommended as highly nutritious. Take a little "Pepsine" along with your food; and guard carefully against constipation. In this way your stomach will recover tone. Give up tea and coffee.

William.—Yes; you will grow yet, always provided you are well nourished, and take plenty of exercise, but not so as to overdo your strength. Your diet should be generous, but not over-stimulating. Remember, however, that physical constitution is inherited, and you may come of a short race. "Growth" is favoured by exercise stimulating the demand for food.

J. G. Clare.—See and follow advice to "Eaton Place" above.

Harry.—Take a teaspoonful of Fellows' "Syrup of the Hypophosphites" in a wineglassful of water (before meals), thrice daily. Let your diet be generous, and have no fears. At your age, you should be in the prime of life. You require more open-air exercise, and this, with the above tonic, will restore your health.

Portobello.—"Congestion" is the preliminary stage of all inflammations. Pneumonia, or inflammation of the lungs, is certainly as common now as ever.

Argus.—A black dye is made by dissolving from 10 to 20 grains acetate of lead in an ounce of water. This is applied to the hair, and, when dry, the hair is wetted with a solution of sulphide of ammonium. The darkness of the tint corresponds to the amount of lead used in the first solution. This dye cannot be used for any time without producing ill-effects, however. [All lead-dyes are dangerous, more or less.] A strong tincture of the shells or coverings of green walnuts is a safer recipe.

Bendbow.—See advice to "William" above.

Prolapsus.—No danger at all; only guard carefully by diet against constipation. You might try for a time a teaspoonful thrice daily of a mixture consisting of tincture of hamamelis one teaspoonful added to eight ounces of water.

Depressed.—Make a trial of the tonic recommended to "Harry" above, and let us hear how you are thereafter. You are evidently over-anxious about yourself.

M. N. O.—If the drum of your ear is perforated you must have treatment by an ear-surgeon. No local remedies are of much service in such a case. See to your general health thoroughly; but yours is a case for surgical advice, such as you have apparently had.

One in Affliction.—You have been exceedingly foolish in not consulting a surgeon. Cases like yours occur every day. We should advise you to use weak injections of Condy's Fluid and water (1 part to 10 or 15 of water), but a consultation with a surgeon is eminently needed in your case, as there are evidently other symptoms present which demand treatment.

W. Samuel.—Are you sure you are not overworked? Rest as much as possible. For a time (as recommended to "Eaton Place" above) let your food be very light. Take a little "Æsculap" occasionally in the morning as a mild aperient. After trial of our advice, as indicated, let us hear how you are. Yours seems a case for the regulation of diet.

A Poor Parson.—Make trial of advice given to "Eaton Place" above. You will improve, if you first begin the treatment by giving your stomach rest, and by taking only rich soups, &c., for a time, this will be accomplished. A little "Pepsine" with the food will be desirable. You are, of course, a nervous subject, and this must be taken into account. If you require a blood tonic, take 15 drops *Fer Bravais* thrice daily in water. Glad to be of any further service.

One in Earnest.—For pimples try the following pills:—Sulphide of lime, 2 grains; sugar of milk, 40 grains; make into 20 pills, and take one every three hours for some days. Dust the face also daily with the following lotion:—Flowers of sulphur, a teaspoonful; glycerine, 2 tablespoonfuls; rose water, half-a-pint. Mix as a mild aperient; try "Æsculap" water occasionally in the morning.

Unsettled.—No need, so far as we see, for you to be anxious. You may take the step without fear. If below par, take the tonic recommended to "Harry" above for a short time.

Beta.—You require (1) care in food taking (avoid tea, coffee, and malt liquors); (2) to take the following: Bicarbonate of potash, 10 grains; bicarbonate of soda, 10 grains; ginger, 5 grains; calumba (in powder), 5 grains; mix. One such powder thrice daily, half-an-hour before meals.

Pedagogue.—You might try the effect of inhaling the vapour of a pint of boiling water, to which have been added ten drops of tincture of iodine. Inhale thrice daily, at the rate of six inspirations per minute, and avoid cold or chill thereafter. What you suffer from is only a symptom of your health being below par. The tonic recommended to "Harry" above will be your best restorative.

Joseph Brown.—Are you aware that "scald head" in a child is not to be cured in a day? You must persevere, and not fly to one remedy after another before any result can be expected. The disease is often of constitutional origin, and we repeat your sheet-anchor should be cod-liver oil. Try an ointment composed of oil of cade, 2 drachms, and glycerine of starch to make up one ounce. Attend to cleanliness strictly.

H. T. W.—1. All in good time. We purpose treating the topic you name. 2. Good whisky well diluted with cold water is as safe as any in such a case. 3. Dumb-bell exercise in the morning.

Espérance.—You cannot hope to get well if you disregard the first step in your eating and drinking. Use an injection morning and night of Condy's Fluid (1 part to 10 of water) and continue the tonic. It is only a matter for improvement of your general health. Avoid all stimulants, beer especially.

Celia.—Such irregularities are usually due to overwork, or too much standing. Try to rest (in the recumbent position) as much as possible, and take 10 drops *Fer Bravais* thrice daily for a time. Let us hear how you are after a trial of this advice. See to your general health.

Troubled M.—Probably some constitutional weakness of skin. See to your health, and take a little cod-liver oil occasionally during the winter. Avoid chills above all.

T. P. B.—The cause is due to some disturbance of health—usually overwork, worry, &c. The great remedy in such cases is rest in the recumbent posture, with care and attention to the general heath. A change of air is often a means of restoration. If not better, write again, giving fuller details.

A. Bailey.—See and follow advice given above to "Harry." Cold sponging each morning may also do you good, if you have sufficient reaction afterwards.

Leonie.—Yours is a case in which you must make a difference or change in your food. Try a vegetable dietary; or eat fruits (apples,

&c.) regularly after breakfast and dinner, and try stewed prunes, &c., as a dinner dish. Your sheet-anchor is your food, not aperients.

Horatio.—A common and troublesome affection. As a first measure, try washing with Cleaver's Terebene Soap frequently, and thereafter anoint the part with a little Vaseline—carbolated Vaseline may be tried. If not better, write again.

J. Muir.—See to your general health. Let your food be nourishing, but avoid all stimulants. Try the lime pills recommended to "One in Earnest," in present No. of Health. The symptoms of heating and cooling will disappear when your general health is well established. They are only a sign of a little weakness. Try a tonic—say, *Fer Bravais*, fifteen drops, thrice daily, in water.

Weipers.—1. Varies with the constitution of the individual. If hard at work and healthy, about twice weekly. 2. Depends on reaction; try the bath very slightly tepid. 3. Cold plunge is a more violent form than the sponge bath.

Ajax.—Try a teaspoonful of Fellows' "Syrup of the Hypophosphites" thrice daily before meals, in a wineglassful of water. As a good tonic (which you evidently require) this will probably cure you. If not cured, write again.

Edith.—In your case there is evidence of general debility, produced, no doubt, in the first instance, by dyspepsia. We concur heartily in your view that a change to the sea would do you good. Secondly, for a time your food should consist simply of nourishing soups, beef essences, &c., so as to give the digestive system a rest in digesting light foods. You might try fruits also, avoiding all constipation, of course. See what change of air will accomplish, and write again.

T. W. R.—We have no special knowledge of your locality in the matter you name. Better to try some good meal-dealer in your nearest large city. He will be certain to furnish you with the flour. Let us know again if not able to procure the flour.

S. S.—1. Try the following for the hair:—Balsam of tolu, 2 drachms; oil of rosemary, 20 drops; tincture of cantharides, 1 drachm; castor oil, ½ oz.; prepared lard, 1½ oz. Rub in night and morning to the roots. 2. Braces alone won't keep the shoulders back. Wear a loose, easy brace like the "Argosy," and correct the stooping by dumb-bells. Special braces for stooping are sold at indiarubber depôts.

Kino.—We should not advise the Sp. Vin. Rect. It is too crude, and you do not get in it the ethers, &c., you will obtain from a good wine. We should say try a good port from the wood; in our experience a good claret is preferable. Can we assist you further?

Scoty.—See advice to "Leonie" above. The pills named do not, in our opinion, differ from ordinary aperient pills.

Grammar.—The phrase "nervous constitution" is usually applied to a phase of physical life in which there exists a natural excitability of disposition, and wherein a person is easily excited or alarmed. There is no actual disease, or even abnormality, involved in such a case. What is called a "sanguine" temperament is often named a "nervous temperament" as well.

Edith Triplet.—The hair will likely return to its natural hue if the wash is left off. Possibly it will, for a time, be lighter in colour than before. There is only one "peroxide of hydrogen" known, and in your friend's case it has acted, as usual, by bleaching the hair. There is no preparation to darken grey hair readily (as a dye) which does not contain lead. Try "Rowlands' Macassar Oil" (the pink colour); this will likely darken the hair if used frequently. The peroxide of hydrogen used as a hair application will in time destroy or weaken the hair.

F. J. Young.—Yes; may be taken safely. It is analogous in its action to coffee. You might try the "Vina Coca" as a readily-obtained preparation.

R. T. L.—Write out the prescription plainly. Say whether it is English or foreign, and we will decipher it for you. As you send it, we cannot definitely answer your query.

Peet-e-Weet.—1. Use a little plain Vaseline for the forehead. See that your diet is not too low. Try the effect of a little rich meat soup. The whitlows are indicative that your system is low. 2. We do not know to which "Dr. Mackenzie," or to which "throat-lecture," you refer.

C. M. T.—A teaspoonful twice or thrice daily. Try a gargle composed of one drachm biborate of soda and 2 oz. of glycerine. See to your general health, and try a tonic.

A. Harvey.—1. Yes: hot salt-water baths. Veins never "pulsate" as you say. Describe the symptoms in the wrist more fully. Any pulsation you see there is that of an artery, which is quite natural. Rub the painful part with hot oil.

Rose.—Look carefully to your digestion; avoid tea and coffee and all stimulants; food to be simple, but light and nourishing (soups, puddings, &c.) for a time. Try the following:—Rhubarb in powder, 4 grains; pepsine, 3 grains. Mix. To be taken after meals. Glad to be of further service.

Countryman.—1. Take the tonic recommended to "Ajax" in present No. for a time. 2. Sleep on a hard mattress. 3. Take no fluids late at night. 4. Use cold sponging each morning. 5. Take open-air exercise. 6. Above all, cultivate a cheerful frame of mind, and know that you suffer from no disease, but only a little weakness, of which you can be readily cured as above.

Roderick.—1. No, a quack. 2. You are quite well; nobody troubles about such ailments; you are needlessly excited about yourself. 3. Not at all. 4. Follow advice to "Countryman" above, and let us hear how you are in a week or two. Avoid quacks in future.

Pembury.—You want (1) a change of air at the sea; 2. Rest from business for a time; 3. A tonic such as that recommended to "Ajax" in present Number. The change of air will do you more good than all the drugs you may take. Follow our advice in this respect if you are wise.

A Foreigner.—Try the following: Carbonate of ammonia, one drachm; bicarbonate of potass, one and a-half drachms; infusion of chiretta, 6 ounces. A tablespoonful thrice daily before meals. You suffer chiefly from dyspepsia or indigestion. Regulate your diet thoroughly. Food to be light (avoid tea and coffee for a time) but nourishing.

A Subscriber.—Eclampsia (not "Eclampsy") is the name given to a form of convulsions caused by interruption to the functions of the kidneys.

M. A. A.—Try the effect of cold-sponging to the parts, and of the tonic recommended to "Ajax" in present number.

Senex.—No need to fear. See our papers on "Hydrophobia." A healthy dog can never communicate this disease to man. It is only a "rabid" animal that can do so.

G. Mitchell.—In such a case as yours, involving difficult questions respecting the eyes, and necessitating examination of the eyes for the formation of an opinion worth having, we recommend consultation with your oculist. He alone is the judge of such a case; and you will be able on reflection to see that what we say is only in accordance with common sense. Any advice given by us or any other person under the circumstances would be worthless.

Z. B.—"Torticollis" is "wry neck." May be due to a variety of causes.

Cruas (or Oroas).—(Your signature is indistinct.) We should recommend you, as a first measure, to try the mixture prescribed to "A Foreigner" in the present number of Health. Glad to be of further service.

P. R.—1. No objection to using almond oil. 2. Try the hair preparation recommended to "S. S." in present number.

F. W. B.—In winter if a lack of warmth is experienced the person ought to sleep in a flannel nightgown. 2. Warm bath twice a week cold; to be rigidly guarded against thereafter. 3. Suggestion about liver paper useful.

A Cardiff Subscriber.—We advise you to try the effect of a dessertspoonful of cod-liver oil, taken thrice daily after food. You are evidently in want of some general strengthening medicine. Let your food be light and nourishing. Avoid quacks and herbalists.

S. W. F.—You did not enclose a stamped envelope. If you will do so we shall be glad to recommend a specialist in skin diseases.

Anxious.—See and follow advice given to "Countryman" in present number of Health. Don't be morbid, as by attention to advice you will get quite well. Let us hear how you are in a few weeks.

James Ross.—The prescription given to "A Foreigner" in present number might be tried. Let us hear the result. Glad to be of further service.

A Shopkeeper.—We recommend you to apply a little pure Vaseline, constantly, to the part. Possibly a little Carbolated Vaseline might be used instead of the plain. Attend to your general health, and a little iron—say ten drops *Fer Bravis* thrice daily in water—will assist your cure.

W. S.—Try the following prescription:—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessert-spoonful thrice daily. This to be taken at intervals for some months.

Arabella.—There seems to be some indication of bone weakness in the child. You must attend very carefully to its food. Cod-liver oil should be given either internally or rubbed into the arm-pits. Rest on a firm, smooth mattress is advisable. But please note that the case is one which should be watched carefully by a medical man.

A Mother.—Treatment of such a fever is best left to a medical man. But by way of prevention, the health of the children should be carefully looked to, as well as the ventilation of the house; while disinfectants, such as Sanitas fluids and powders, should be used in all the closets of the house.

Diamond.—Try the hair-lotion recommended to "S. S." in present number. Such symptoms are often an indication of general health being out of order. The small-tooth comb is not required either for children or adults where attention is paid to the cleanliness of

[*Continued on page* 304.

INTERNATIONAL HEALTH EXHIBITION,

LONDON, 1884.

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President—His Royal Highness the Prince of Wales, K.G.

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the head by ordinary washing, and the use of a little Borax occasionally.

Alfredus.—Try the preparation recommended to "S. S." in the present number.

A Student.—You are overworking yourself, and your symptoms indicate that you would be the better for rest, and taking a desert-spoonful of cod-liver oil thrice daily after food.

Ægrotat.—Either of the preparations you name is adapted for your case. In reference to stimulants, it is better to try the experiment of seeing whether total abstinence is not preferable to stimulants.

David Denison.—Try the following:—Carbonate of ammonia, 1 drachm; tincture of squills, 3 drachms; compound tincture of camphor, half an ounce; infusion of senega to make up 6 oz. A table-spoonful every four hours. You might also try the effect of cold sponging the chest in the morning and brisk friction thereafter.

Rufus.—Why do you not use a sponge and water instead of licking the stamps? You are liable to contract serious disease by your present practice. Try the effect of a vegetable dietary and of eating fruits, &c., as a cure for constipation.

Constant Reader (will please use some more distinctive name in future). You have been needlessly alarmed by the quacks you have consulted. Use cold sponging, and wear a suspensory bandage.

George Burton.—Your case is eminently one for a vegetable dietary, which will obviate any necessity for aperients, and probably also relieve the symptoms of which you complain. You are evidently overworking yourself, and this may account for your present troubles. Use plain Vaseline as an application to the irritated parts.

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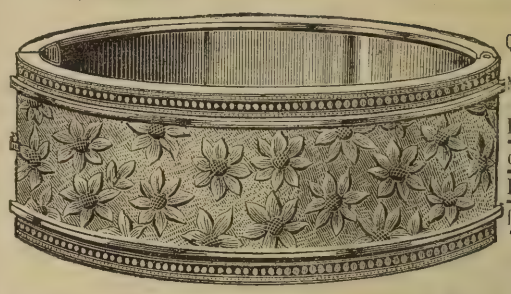

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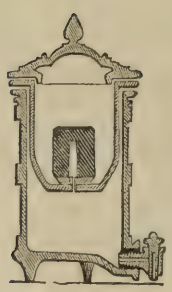

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 15, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The question whether linen, cotton, or woollen underclothing is preferable has been recently ventilated in various quarters. Dr. Gustav Jaeger has elaborated a theory of sanitary underclothing, in which he maintains that woollen materials are preferable to all others; and that, by adoption of his idea, the risk of noxious dyes are avoided, and due warmth secured. Dr. Jaeger would also have us dress so that sufficient underclothing would obviate the necessity for great-coats. Now, as regards noxious dyes, these, of course, are rarely, if ever, found in articles of underclothing; and there are comparatively few cases, we are persuaded, in which the ordinary dyes used in colouring other articles of attire can affect health. As regards the contention that we should dispense with great-coats by wearing a sufficiency of warm underclothing, the suggestion is good in theory, but difficult of practical application. If it were merely a question of passing from a normal indoor temperature to that of the outside air, there need be no hesitation in adopting Dr. Jaeger's suggestion. But when we consider that we have to tenant rooms often heated far above a healthy standpoint, and thereafter to face the cold outer temperature, there can be no question that the great-coat or ulster is a necessity of life, and an important means of guarding against cold and chill.

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Mr. Mundella recently stated, in reply to a question asked in Parliament, that the attention of the Privy Council had been called to the case of poisoning by "Holt's Specific for Whooping Cough," to which allusion was recently made in Health. He added that a Bill intended to deal with such cases (and presumably with the entire question of patent and poisonous medicines) was under consideration, and would be introduced in due course in the House of Lords. Recent cases of poisoning by the unguarded use of patent medicines, and through the sale of these medicines by grocers and other unqualified persons, have been somewhat too numerous to escape Government notice.

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An important utterance on the subject of cremation in its relation to health and to the prevention of disease, was recently delivered at Newcastle-on-Tyne by Mr. B. S. Proctor, in the course of an inaugural address delivered before the "Society of Chemical Industry" of that town. Mr. Proctor alluded to the "germ theory" of disease, and to its bearings on the explanation of the spread of infectious diseases. In the course of his remarks he very wisely insisted that neither in life nor in death should an individual permit himself, or be permitted, to become a source of health-danger to his fellows. Remembering Pasteur's important discovery of the conveyance upwards to the surface, by worms, of active disease-germs from the bodies of cattle which had been buried years before, Mr. Proctor insists that in cremation alone can we find our safety from disease-outbreaks. There is much to be said for the view that only the thorough destruction, by fire, of diseased bodies with their contained germs can secure us against the power of these germs to reproduce disease at a future period. All we know of disease forms suggests that burial in the earth does not affect their vitality. The soils of thickly-packed cemeteries must, in many cases, be literally hot-beds of such germs; and it is startling to reflect upon the possibility, that to the renewed activity of such germs resuscitated from the grave, the fresh and apparently mysterious outbreaks of disease which now and then occur may be due.

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Practically we recognise the safety of the actual destruction of disease-germs when we disinfect clothes by steam and by hot air, when we burn the rags used to wipe the mouth of a fever-patient, and when we take care to see that the excretions of cholera and typhoid fever patients are duly destroyed by fire or otherwise. That what is practised in such cases ought to be likewise carried out in the case of the body as a whole, when death from infectious disease exists, is the contention of Mr. Proctor and of other sanitarians. The mere fact that Dr. Cameron, M.P., has given notice that he intends to introduce into Parliament a Bill "To Provide for the Regulation of Cremation and other Modes of Disposal of the Dead" shows that public attention is being directed towards this all-important topic. There is, of course, a strangely sentimental side to this question. The idea of cremation is repulsive, no doubt, to many, as it is the reverse to others. But, as we have before remarked in these pages, the question of the scientific disposal of the dead is one which will be forced upon our notice sooner or later; and in the face of the scientific probability that disease is liable to be propagated from dead to living by the ordinary modes of burial, it would seem as if "cremation" is likely to come to the front, as a solution of a most serious difficulty.

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A curious example of the influence of demand and supply has recently been afforded by an incident mentioned in the Report of the Royal Gardens at Kew for 1881. The natives of India in their abhorrence, as a matter of religious faith, of all animal food, will not eat cheese prepared with ordinary rennet. The cheese-trade of India thus becomes practically non-existent if animal rennet is to be used in the manufacture. A vegetable substitute for the ordinary animal ferment had, therefore, to be found; and the fruit of *Withania coagulans*, a shrub said to be common in Northern India, has been declared suitable as

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a ferment for cheese-making. An extract made of the seed-capsules of this plant has been found to clot milk rapidly; and the fermentive principle of the seeds is said to resemble very closely in its characters the ordinary rennet ferment in use amongst ourselves. Henceforth, the Eastern mind may possibly be enabled through this comforting discovery of science to ingest its cheese with a peaceful mind.

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If London has had its "Jumbo," and now possesses its "White Elephant," Scotland can, at least, boast of its whale. The "Tay Whale," we notice, is now being exhibited in various cities and towns of Scotland. As a means of popular instruction, such an exhibition may not be without its good effect; but there are still a large number of persons who may require to be told that a whale is not a fish, but a true mammal (or member of the quadruped class), like man himself. It is astonishing to find many educated persons in this advanced age still believing that a whale is simply "a great first." If scientific opinions be correct, it is probable that the whales have sprung, in the far-back past, from some four-legged beasts allied to the bears. Whales possess two fore-limbs in the shape of swimming-paddles, and two hind-limbs also—the latter, however, being rudimentary, and lying concealed amidst the body tissues. There need be no more surprise that a whale appears before us as a quadruped modified for a water-life, than that a seal (which is merely a kind of dog) should be similarly adapted for an aquatic existence—or, for that matter, than that a bird, adapted for flight, should in certain cases be a runner, like the ostrich; or a swimmer, like the duck or penguin.

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Details of a curious case of fasting have lately been published. A man inmate of a workhouse at Bromsgrove, suffering from a serious nervous disorder, entailing brain-symptoms and complete loss of vision, fasted for thirty-five days. On the sixth day of his fast he took a small piece of toast, but, with this exception, during the whole period took no food or fluid save water. It is stated that he did not exhibit any signs of unusual weakness, but the fact that he spent his days in bed may possibly account for this latter feature. As is usual in such cases of voluntary fasting, religious delusions were present; the patient declaring that he had been commanded from Heaven to eat nothing. This case teaches us anew the great importance (already detailed in our articles on "Fasting" in Health) of water as an essential food-element.

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Next week we begin the publication of a series of articles dealing with the departments included in the programme of the "International Health Exhibition," to be opened at London on May 1, 1884.

Soil-Pipes and their Ventilation.—Recent experiments have demonstrated that, in order to construct a ventilating-pipe from a soil-pipe, drain, or sewer, it is necessary to fit a properly-constructed ventilator or a ventilating cowl to the ventilating-pipe. Only in some such fashion as this can a strong and constant upward current be induced, so that the effete and noxious gases may be drawn out of the pipes, and duly destroyed by contact with the fresh oxygen of the atmosphere—Nature's "own disinfectant." In Messrs. Banner's system such an arrangement is fully carried out.

Original Essays

"Life is not to live, but to be well."—*Martial.*

FIVE TERRIBLE YEARS.

By James Clough.

Five terrible years—1347 to 1351 A.D.—so terrible, indeed, that mankind, struck with doubt and dread—for there were sixty-three million victims—must again and again have inquired if all living beings were to be swept off the face of the earth. These were the five terrible years of the Black Death, called also the Great Death, which in turn swept over the three known quarters of the Old World, from China to Spain, from Greenland to Africa, and, if Greenland, probably also from Labrador to Cape Horn.

The three inseparable sisters, War, Famine, and Pestilence had for many years been stalking among the nations showing their grim, gaunt, cruel forms everywhere, and relenting not on the side of mercy until from one-third to one-half of the population of every known State had perished.

There were signs on the earth in those days in the form of earthquakes, signs in the heavens in the form of comets—those superstitiously dreaded sword-shaped stars; people saw strange visions; there were rumours of wars; there was rampant wickedness in high places; the presages of the destruction of Jerusalem in the old days seemed as nothing to the terrors then present before the eyes of every one.

Indeed, to the pious of the time, whose piety, of course, was plentifully seasoned with bigotry, ignorance, and superstition, the world appeared exceptionally wicked, and at least to demand the fiery sword of the destroying angel to purify it. The great schism of the Papacy tore Christendom asunder, and gave some the occasion to say that the Head of the Church was punishing the Catholic world for its crimes. Others found in the Plague a sign that the God of Abraham was punishing the Christians for allowing the Jews, whom he had accursed, an asylum in their midst; whilst a third party attributed the disasters of the nations to the cessation of Crusades against the Turks. Nor were there wanting those who found in the fiery pestilence the end of all things.

In this century we can afford to look back with philosophic eye at these childish attempts to peer into the inscrutable ways of Providence, and we can—having in mind our own cholera experiences—point to the gross disregard of the most obvious principles of sanitation and other natural causes as sufficient to account for the mischief without laying it at the doors of false Popes, unbelieving Jews, or misbelieving Turks.

From the time of Justinian the Eastern Plague had periodically swept over Europe, for the Crusaders and Christian pilgrims were industrious, though unconscious, disseminators of the pestilence throughout the West, and thus the nations of the East may be said to have been fully avenged of their despoilers.

The Black Death was an Eastern plague, and for the origin of the particular outbreak now under notice we must turn to the Celestial Empire. In that far-off land long and repeated periods of drought and consequent famine were followed by years of superabundant moisture and floods, of superabundant food, and, as a matter of course, of pestilence. In 1334 five millions of Celestials perished of plague, so that, the fields lacking labourers in 1337, a

famine resulted which carried off a further four millions. China has always had important commercial relations with the interior of Asia. Caravans started thence and proceeded through Mongolia and Thibet to the Caspian and the Crimea, to India and to Arabia. From the Euxine there was communication by sea to the city of Constantinople, and in this city the Black Death showed itself in 1347, that is, in ten years after its first appearance in China.

We may now pause, in order to glance at the sanitary condition of Europe at this period, remembering, as we do so, that the Black Death—an epidemic more fatal than Asiatic cholera—had already begun to ravage Constantinople, the commercial and political centre of the three continents, as also the religious capital of the Mahometan world.

In the year 1345 there had been a superabundance of rain throughout Europe, from which great floods arose, and many low-lying districts were reduced to the condition of swamps. The succeeding year was one of great heat, and countless myriads of locusts springing into existence darkened the sun, devoured the harvests, and made the air putrid. This was followed in 1347 by a fearful famine; food was so dear that the poor were obliged to content themselves with all kinds of refuse, sickness prevailed everywhere, children perished of hunger at their mothers' breasts, and in the cities so many died that the living could scarce bury them before corruption set in. And further, the constitutional strength of man, or his power to combat disease, was presumably low at this period, a state of things which had been brought about by the coarse and often unwholesome food which was all that could be obtained because of the constantly-recurring wars, and this condition was further promoted by the bad ventilation of the houses, by the pestilent ditches which surrounded most places under the guise of moats, by the lack of personal cleanliness, and by the filth of domestic arrangements arising from the absence of any attempt at drainage.

The arrival, then, of the plague wave at Constantinople was a most serious event, and fraught with death to countless multitudes. Few diseases indeed which it has been the lot of the historian to record are more calculated to inspire dread than the Black Death. Buboes or inflamed boils about the size of an apple appeared in various parts of the body, especially in the groins and arm-pits. These swellings contained a pestilential matter of a most disgusting odour, and in the root was a hard, black, coal-like nucleus about the size of a lentil. If the patient were safely relieved of this matter all might be well with him, or at least there was some chance of so desirable a consummation; but if not, then black spots appeared all over the body, the lungs rotted away, black blood was thrown up, and the breath was so pestilential, and even infectious, that few were found sufficiently courageous to nurse the patient. The nearest and dearest relationship, as a rule, ceased to be a bond of union, and even mothers fled from their helpless babes. The forsaken patient was torn to pieces by burning pains in the chest, by scorching thirst which no known liquid could quench, and he had moreover the consciousness that if any one should be so far softened by the calls of humanity as to come to his relief, his very touch, even his very breath, contained the seeds of the disease, and might slay the Good Samaritan within a few hours.

By preference the disease attacked the young, and it added to its terrors by its rapidity of action. Three days mostly sufficed to give the victim his quietus, and though some lasted till the fifth day, they must have envied those who died early—even those who died, as some did, as suddenly as if by the hand of the assassin—for the sufferings of those who were attacked were so intense that they howled like dogs. It can scarce be wondered that some sought relief by suicide.

Nor was the disease confined to man alone, for all animals with which he came in contact perished too. Horses, oxen, sheep, dogs, swine, and even poultry are mentioned as having been especially liable to attack; and one writer adds that the most ravenous beasts of prey would not touch any of the carrion thus gratuitously provided, because of its exceptionally offensive odour.

Such, then, was the frightful epidemic which, as we have said, appeared at Constantinople in 1347, and that just when the concatenation of circumstances seemed most favourable for its propagation.

(*To be continued.*)

STORIES OF SCIENCE AND CRIME.

SIXTH PAPER.—CASES OF FASTING (*Continued*).

Among the many celebrated cases of fasting, that of Reuben Kelsey figures as one of the most notable. An account of it has been given by Dr. B. W. Richardson:—

The faster in this case lived for fifty-three days, and his history, tersely told by the narrator who observed it, runs as follows:—The individual who subjected himself to the fast was a youth named Reuben Kelsey. Until three years before he commenced his fatal fast he was considered a young man of great promise, remarkable for the correctness of his conduct and for his diligence in the prosecution of his studies. After having received the ordinary advantages at the Academy at Fairfield, he entered on the study of medicine, and read in the office of Dr. Johnson. In the year 1825 he attended the lectures at the College of Physicians and Surgeons of the Western District.

Although, among so many, it is not always possible to know what proficiency each makes, yet, from all that could be gathered, he must have at least equalled his companions in the progress he made in his studies. His health seemed good, and there was nothing very peculiar in the operations of his mind. But in the course of the summer, after the close of the session of the college, his health began to decline, and his mind seemed to have undergone a change. His spirits, which were never very buoyant, became more sedate, and his thoughts seemed habitually to dwell on the subject of religion. He quitted Dr. Johnson's office and went home. From that time until his death he never left his father's house, even for a day. For the three years immediately preceding his death he almost constantly kept his room, apparently engaged in meditation. His only companion was his Bible. He read nothing else, and his whole thoughts seemed fixed upon another world. He shunned society, even that of the pious; but he seemed happy and full of hope. To his family he was kind and attached, and,

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

with the exception of the deep cast of his devotional feelings, the equilibrium of his intellect did not seem, to his friends at least, to be materially disturbed.

Considering the little exercise he took, his general health during the period was as good as could have been expected He came to the table at every meal when called, and seemed not deficient in appetite. The only sickness of any consequence he experienced during his seclusion was an attack of cholera morbus in the summer of 1828, from which he soon recovered, and seemed to enjoy his wonted health until the latter end of May, 1829. At this time his friends began to notice that his appetite was failing. It continued to decline more and more until about the beginning of July, when it seemed entirely to have disappeared. For some weeks he had eaten very little, but on the 2nd of July he declined eating altogether, assigning as a reason that when it was the will of the Almighty that he should eat he would be furnished with an appetite. For the first six weeks he went regularly to the well in the morning and washed his head and face, and took a bowlful of water with him into the house. With this he used occasionally to wash his mouth; he also used it for drink. His parents think that the quantity of water he took in twenty-four hours did not exceed, if it equalled, a pint. When he had fasted about a week his parents became alarmed, and sent for medical aid.

Compulsory means to make him take food were found unavailing. On one occasion he went three days without taking even water; but this was probably more than he could persist in, as on the fourth morning he was observed to go to the well and to drink copiously and greedily.

On the eleventh day of the fast, he replied to the expostulations of his friends that he had not felt so well nor so strong in two years as at that moment, and consequently denied the necessity of taking food. For the first six weeks he walked out every day, and sometimes spent a great part of the day in the woods. His walk was steady and firm, and his friends even remarked that his step had an unusual elasticity. He shaved himself until about a week before his death, and was able to sit up in bed to the last day.

His mental faculties did not seem to become impaired as his general strength declined, but, on the contrary, his mind was calm and collected to the end. His voice, as might have been expected, towards the last became feeble and low, but continued, nevertheless, distinct. Towards the close of his life he did not go into the fields, nor during the last week even to the well, but still he was able to sit up and go about his room. During the first three weeks of his abstinence he fell away very fast, but afterwards he did not seem to waste so sensibly. His colour was blue, and, towards the last, blackish. His skin was cold, and he complained of chilliness. His general appearance was so ghastly that children were frightened at the sight of him. Of this he seemed himself to be aware, for it was not uncommon to observe him covering his face when strangers were passing by. He died on the fifty-third day. At the time of his death Mr. Kelsey was twenty-seven years of age.

Dr. M'Naughton very reasonably supposed that the system in this case, as in the cases of hybernating animals, lived on its own resources. When the body is emaciated, the fatty part is taken up by the absorbents and conveyed into the blood,—the chief condition for which state of things to be carried on without causing delirium, raging fever, and death, is a supply of water to dissolve and dilute the saline and alkaline fluids. No other drink would answer the same intention in cases of abstinence from all solid food; strong drinks would consume the vital powers, inflame the digestive canal, and prevent absorption taking place. The nutritives, so-called, as porter, beer, and the like, would oppress the brain and cause fever and stupefaction and dropsy.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

INTERNATIONAL HEALTH EXHIBITION,

LONDON, 1884.

The following details will prove of interest to our readers:—

Patents, Designs, and Trade Marks Act, 1883.—The following certificate has been received from the Board of Trade:—"Upon the application of Mr. Edward Cunliffe-Owen, of South Kensington, made to the Board of Trade, on Nov. 30, 1883, the Board of Trade do hereby certify that the International Health Exhibition proposed to be held at South Kensington, in the county of Middlesex, from May 1, 1884, is an International Exhibition.—Signed by order of the Board of Trade this ninth day of January, 1884.—Henry G. Calcraft, Assistant-Secretary, Board of Trade."

The attention of exhibitors is specially drawn to the following extract from the Patents, Designs, and Trade Marks Act, 1883:—

"39. The exhibition of an invention at an industrial or international exhibition, certified as such by the Board of Trade, or the publication of any description of the invention during the period of the holding of the exhibition, or the use of the invention for the purpose of the exhibition, in the place where the exhibition is held, or the use of the invention during the period of the holding of the exhibition by any person elsewhere, without the privity or consent of the inventor, shall not prejudice the right of the inventor or his legal personal representative to apply for and obtain provisional protection, and a patent in respect of the invention, or the validity of any patent granted on the application, provided that both the following conditions are complied with, namely—(*a*) The exhibitor must, before exhibiting the invention, give the Comptroller the prescribed notice of his intention to do so; and (*b*) the application for a patent must be made before or within six months from the date of the opening of the exhibition.

"57. The exhibition at an industrial or international exhibition, certified as such by the Board of Trade, or the exhibition elsewhere during the period of the holding of the exhibition, without the privity or consent of the proprietor, of a design or of any article to which a design is applied, or the publication, during the holding of any such exhibition, of a description of a design, shall not prevent the design from being registered, or invalidate the registration thereof, provided that both the following conditions are complied with, namely,—(*a*) The exhibitor must, before exhibiting the design or article, or publishing a description of the design, give the Comptroller the prescribed notice of his intention to do so; and (*b*) the application for registration must be made before or within six months from the date of the opening of the exhibition.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

BEAUTY-CULTURE.

By Philip Foster, M.D.

THIRD PART.

"Beauty itself doth of itself persuade
The eyes of men without an orator."—*Shakespere.*

The style in which the hair is arranged should be decided by the face, and not dictated by fashion. Large pads and masses of false hair are objectionable, as they give an appearance of heaviness to the head, and overheat it. There are few persons who are not improved by a light curl or two on the brow, but any mode of dressing the hair, as the Grecian fringe, by which the forehead is covered, gives an unintelligent look, and consequently detracts from what has just been insisted upon as one of the principal elements in beauty. Vigorous friction for a few minutes daily with a brush moderately hard, but not sufficiently so to be unpleasant, is the best means of increasing the blood supply, and consequently of promoting the nourishment, luxuriance, softness, and glossiness of the hair. The only objection to a little simple grease is that it soils the headdress. For washing the head, warm, not hot, water should be used, and the soap be free from excess of alkali. We may rest assured that the natural colour of the hair, whatever it may be, is the colour that suits us best; and could we change it, as the advertisements promise, to the "fashionable" hue, we should lose, not gain, by the alteration. Cantharides (Spanish fly) is the active ingredient of all hair-producers, and as good a wash for incipient baldness as can be used is made by diluting the tincture with twice its bulk of water.

The whiteness and softness of the hands may be preserved by wearing gloves during exposure to great heat, whether from the sun or fire, and when doing any rough work. Dryness of the skin indicates derangement of health, and calls for medical treatment rather than local applications. Every time the hands are washed the skin at the nail-roots should be pushed gently back, and the under surface of the nails cleaned with a *soft* brush. Smoothness may be restored after washing by rubbing the back of each hand lightly for a minute or so with the palm of the other. Curved nail-scissors, which can be obtained at the surgical instrument-makers, are much more convenient than the old-fashioned straight ones.

The human form divine cannot be improved by the modiste, and the more closely dress follows the natural outline of the body, the more becoming it will be. Where the figure is defective a little padding may—should, I think, be used; but all contrivances for producing unnatural fulness are thoroughly inartistic, and their adoption indicates slavish adherence to fashion or vitiated taste. Compression of the waist, which has just been condemned on account of its injuriousness to health, must here be denounced on the ground of taste. The beauty of the waist consists in the gentleness and gradualness of the inward curve, and is destroyed by tight-lacing. High-heeled and tight boots render progression difficult, and consequently ungraceful. Perpendicular stripes increase both apparent height and fulness; while horizontal ones give breadth, but decrease height. All lines across the figure make persons look shorter, and anything which increases the real or apparent breadth has the same effect. Glossy materials, like dark colours, have the property of reducing apparent bulk. Little women, then, and those inclined to be stout, should avoid flounces and double skirts, and have their dresses cut in that most elegant and becoming, because most natural, of all styles—the "Princess," the long, flowing, uninterrupted lines of which would make them appear taller and slighter. "Draping well" is a quality that must never be lost sight of in the selection of a dress-piece. The complexion, hair, and eyes should, of course, regulate the colours worn. As a guide in this matter, the fair reader would do well to make herself acquainted with the composition of colours, as any component of a colour will harmonise with it. The use of different shades of the same colour is an easy way out of this difficulty, and the effect produced always chaste and excellent. The gloves require to be lighter than the dress, and not anything is comparable to lace for the neck and wrists. Not only must dress be tasteful in itself, but it must also accord with the station in life and immediate occupation of the wearer, otherwise an unpleasant impression of incongruity will be created.

Our houses are, so to speak, the back-ground of the picture, and their appropriate decoration is a matter of no little importance, although its discussion does not lie within the province of this article.

One of the rarest and most powerful weapons in the armamentarium of beauty is a perfectly easy, natural, and unaffected manner. Let the fair reader, then, beware of affectation and conceit, which will mar all else, and inevitably excite contempt, ridicule, and dislike. Nervous movements, mannerisms, and tricks of habits, from which few are entirely free, are often performed quite unconsciously, and therefore, in order that they may be corrected, some relative or intimate friend should be requested to point them out.

Dr. George M. Beard and Mr. Herbert Spencer almost simultaneously sound the alarm against our modern worry in the words, "The gospel of work must make way for the gospel of rest." An English writer, signing himself E. S., protests, in the *Journal of Science*, against a theory of civilisation which makes the acquisition of material wealth almost its sole object, and which brands all men not engaged in such pursuit as idlers. "We have under its inspiration stripped our own country, over a great and increasing part of its surface, of every beautiful feature. We have blackened its skies with smoke-clouds, polluted its air with sulphurous acid, filled its streams with liquid filth, covered its hills with 'spoil-banks,' blighted its green fields, cut down its woods, and extirpated many of its most lovely animal and vegetable species. Our cities, from London downwards, present, as their main feature, meanness, monotony, and ugliness by the square mile; rarely, indeed, relieved by a street or a single building upon which the eye may rest without pain." The diseases caused by over-work, public morals, and the effect of our system on true intellectual progress, receive vigorous treatment. The author concludes that our industrial civilisation is found wanting in every particular. "It has broken down more rapidly and more disastrously, even, than the military *régime* which preceded it, and will be found to have left upon the human race even deeper marks of its failure."

Kitchens Made Light by Means of Chappuis' Daylight Reflectors.—The cost is from 25s.; the saving in gas or oil soon makes up for that outlay. Prospectuses sent on receipt of two stamps, addressed (H.) Chappuis, patentee, 69, Fleet-street, London. —[Advt.]

Our Papers on Popular Science.

THIRD PAPER.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

AIR.—I.

By Edward H. Riches, LL.D., F.R.A.S.

The air which surrounds or envelopes our globe is a mixture (not a chemical compound) of oxygen and nitrogen, with a minute proportion of carbonic acid and water in the state of vapour; and these last, the carbonic acid and the water, although constituent parts of the air, are, as it were, accidental ingredients. Now this atmospheric air, upon which every form of life, including, of course, our own, so largely depends, is, as was just observed, a *mixture* —a transparent fluid—for the ultimate particles composing it are not subject to cohesion, hence we can readily understand how it is that this air has a tendency to spread out in all directions, to rise upwards and to sink downwards. We may remember also that air is *porous* to a very great extent, for we know that a great bulk of air may be compressed into a very small space, but as it cannot be compressed beyond a certain limit we may bear in mind that it is also impenetrable. Now just as a cork, if placed at the bottom of a vessel filled with water will, when released, at once rise to the surface, so steam, for the reason that it is about half the weight of atmospheric air, will always rise and float in it. If air be estimated by weight it is found approximately to consist of one atom, or equivalent, of oxygen to two of nitrogen; or if it be estimated by volume, the oxygen is to the nitrogen in the ratio of one to four. It may be noted, too, that when air is understood to be a *mixture* rather than a *combination* of gases, it is not to be supposed that the distinctive properties of the components are changed, and that they do not retain these, although in other chemical bodies, such as nitrous and nitric oxides and nitrous and nitric acids formed from a compound of oxygen and nitrogen, the properties of both the gases are almost lost, and new properties created.

In all climates and at all altitudes the ratio of the oxygen to the nitrogen in the atmospheric air remains nearly the same. In ancient times little was understood as to the weight which air possesses, but that it does contain weight may be easily ascertained from such a simple experiment as weighing in a finely-adjusted scale a vessel containing air with a vessel of equal weight from which the air has been exhausted. And as the air has weight, it must also exercise a pressure upon everything; and to show the very great pressure which it does bear may be proved if we take, say, two hollow hemispheres, and place one loosely on the top of the other; now let a tube with a stop-cock be connected with the exhausting apparatus of an air-pump. As long as the stop-cock is open, the top hemisphere may be easily lifted from the lower one, for the reason that, putting aside the weight of the hemisphere itself, the pressure of air within it counterbalances the pressure of air without. Now, let the air be withdrawn from the interior, the stop-cock closed, and the apparatus unscrewed from the air-pump (taking great care that no air enters); it will require a very considerable force to separate the two hemispheres. Some idea of the force required may be gathered by, say, supposing the diameter of the circle of the hemisphere to be fourteen inches, when it would require a force equivalent to nearly a ton. If it were not for the counterbalancing of this pressure of the air from within the human body, as opposed to the pressure from without, our physical frame would be crushed into fragments! It is not our present intention, however, to enlarge on the varieties of detail connected with the chemical and mechanical properties of air, but as concerning most branches of science there is a knowledge—a right understanding of which is useful in every-day life—and as it so frequently happens that an acquaintance with scientific facts is highly conducive to appreciating aright their correct application to hygienic matters, it will be our aim in the course of this series of "Popular Science Papers" to gather up just those crumbs which shall, in their cohesion, form a wholesome and easily-digested mental food; for as Thomson said,

Oh! who, who would live, if only just to breathe
This idle air, and indolently run,
Day after day, the still returning round
Of Life's mean offices, and sickly joys?

We often speak of *drawing in the breath*, and we do so in order that we may have an enlarged space in our chest, when the pressure of the air which is external to us is forced in to fill up the vacancy, the air entering the lungs not, as will be seen, because it is *drawn in*, but because the weight of the atmosphere forces it into the empty space. The air is caused to escape from the lungs by means of its elasticity; in fact, by means of muscular action, the lungs compress the air contained in them, and, by this compression, give to it a greater elasticity than the air outside; and, by the excess of this elasticity, it is propelled, and escapes through the nose and mouth.

It may be remembered that water, and most liquids exposed to the air, absorb a certain amount of air, and this is maintained in them by the pressure of the atmosphere acting on the surface of the liquid; and in the case of boiling water it may be remembered that there is no taste in it, for the reason that the heat has expelled the air which was contained in it before boiling. It is a fact, too, that the temperature at which water boils is dependent on this pressure of the air which we have alluded to; for instance, it has been found impossible to boil an egg at the top of a very high mountain, but in places *where the pressure is very slight* the water boils and goes off in steam without becoming even hot enough to boil an egg.

The subject of warming and ventilation will be treated in our next paper, from which it will be seen the reasons why vitiated air is so fatal to life. Accident and disease in the case of human beings often furnish us with experiments, some of which have been cruelly tried on animals. We frequently hear people complain of the vitiated air in a room or building, but they say sometimes: "Never mind, I shall soon get accustomed to it;" and some ignorantly suppose that, because they really do get so accustomed to it that it can be borne without any considerable degree of discomfort—that it is doing them no harm. But this is a dangerous error indeed to fall into. At what a price,

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

too, do people get accustomed to bad air! (And, for the matter of that, to many other bad things in life!) There always ensues a gradual depression of all the functions of nutrition and secretion; less oxygen, under these circumstances, is absorbed, so less *is required* in the atmosphere.

Just as a vitiated atmosphere will suffice for the respiration of a cold-blooded animal, it will be enough for a *depressed* organism. Have we not noticed that when we enter a vitiated atmosphere our breathing becomes very laborious, and in consequence a depression of all the organic functions ensues; but, when this depression has actually come about, we find that we can breathe again more easily. Why is this? Simply because we do not under this new condition require so much oxygen, and also we do not give out so much carbonic acid. It would not, indeed, be possible to live at all in a vitiated atmosphere were it not for this readjustment, so to speak, of the organism. But because we may get accused to bad air, let us ever remember that to breathe it is most harmful; and the law of adaptation is here beautifully seen in the fact that our organisms, under certain conditions, are depressed just to the necessary point of our being capable of respiring when in a vitiated atmosphere.

What is understood by real ventilation should be, then, a getting rid of all vitiated air and a replacing it by fresh air; and for some matters in relation to this the reader is referred to our next paper.

"THE SONG OF THE SPORES."

A SCIENTIFIC DITTY.

The following ode details in humorous fashion the principles of the germ theory, and of the system of surgery—"antiseptic surgery"—with which the name of Sir Joseph Lister is so worthily associated. By means of carbolic-acid spray and dressings, the antiseptic system obviates many dangers in surgery; the system being founded on the theory that carbolic acid destroys the germs or spores of lower life which the air contains, and which produce putrefaction and suppuration in wounds:—

When you open your mouth or breath through your nose,
I am sure you are all aware, oh!
You take in as many live things at a dose
As bothered the life out of Pharaoh.
For they float on the tide of the air, air, air;
They float on the tide of the air.

They dart in and out, and they rush out and in
With a freedom that makes people stare, oh!
And if any one thinks of incising the skin,
The vermin are sure to be there, oh!
For they float, &c.

They assume many forms as they change their abode,
Some are stout ones, but others are spare, oh!
They are round like a cell, or resemble a rod,
As they wriggle about in the air, oh!
For they float, &c.

Some say they are starch, and some say they are soot,
And they think it's a paltry affair, oh!
To smother such stuff in "carbolic dilute,"
With the greatest precision and care, oh!
While they float, &c.

But others believe that such pests are the cause
Of diseases neither little or rare, oh!
So they kill them with lac, and with spray and with gauze,
As proclained from the Clinical Chair, oh!
While they float, &c.

So sing to the praise of the wonderful Joe,
Who controls all the powers of the air, oh!
Laying sporules and germs and epiphytes low,
As they dance on the stump that is bare, oh!
For they float, &c.

May the sporicide rise, and with each passing day
Drench the vermin before they're aware, oh!
With the clear sparkling foam of the murderous spray,
As they circle about in the air, oh!
For they float, &c.

And may swift wing'd Time hasten onward in flight,
Till it joyfully comes to declare, oh!
That the spore-killer ranks as a baronet or knight,
For exploits in the Clinical Chair, oh!
For he kills every germ in the air, air, air;
He kills every germ in the air.

There is nothing that so tends to shorten the lives of old people, and to injure their health, as the practice of sitting up late, particularly winter evenings. This is especially the case when there is a grown up daughter in the family. This sanitary item is published at the request of several young men.

Alphonse Karr was lately a guest at a dinner of some homœopathic physicians at Paris, when, after toasts had been honoured to Hahnemann and to the great lights of the science now living, he was asked to propose a toast. "Gentlemen," he said, "you have drunk the health of many physicians, but there is one toast you have forgotten. Permit me to repair this omission. I drink to the health of your patients."

James T. Fields used to tell this story of Dr. Channing (*Med. and Surg. Rep.*):—"The reverend doctor and the medical doctor were both at a party in Boston one evening, and, some one being taken ill, the man of medicines, Dr. Walter Channing, was summoned. The servant entered the room where the brothers were seated, and said, 'Dr. Channing is wanted.' 'Which Dr. Channing?' said Walter, the physician; 'the one who preaches, or the one who practises?'"

Change of Air for Children.—The robust aspect of healthy children is good evidence of the thorough hygienic state of the dwelling-house, and of the excellence of its domestic management. A ruddy glow in the face of a child tells at once of sufficient outdoor exercise and indoor ventilation. Without a full amount of fresh and pure air the cheek loses its colour and the flesh its firmness. The blood is impoverished, its circulation languid, and nutrition is interrupted. The effect of what is called "change of air" in stimulating these processes is well known, and particularly obvious in children. Very often the good that would be done in this way is put in jeopardy by too much attention being directed to the particular place where this change is to be obtained, and too little to the sanitary state of the house and the size of the rooms to be occupied. Perhaps the smaller bedrooms are allotted to the children, unmindful of the fact that they spend nearly half of the twenty-four hours continuously in the bedroom; or they have but one room for meals and for play, so that if kept indoors by a wet day they have to pass many hours together in one room. It may be that neglect of some of these particulars at home has occasioned the necessity for the change; if they always received the attention deserved, both at home and abroad, periodic visits to so-called "health resorts" would be required less frequently, and we might find a more uniformly healthy appearance among the children of the residents.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

A FEW RULES FOR DYSPEPTICS.

1. Eat slowly, masticating the food very thoroughly, even more so, if possible, than is required in health. The more time the food spends in the mouth, the less it will spend in the stomach.

2. Avoid drinking at meals; at most, take a few sips of warm drink at the close of the meal, if the food is very dry in character.

3. In general, dyspeptic stomachs manage dry food better than that containing much fluid.

4. Eat neither very hot nor cold food. The best temperature is about that of the body. Avoid exposure to cold after eating.

5. Be careful to avoid excess in eating. Eat no more than the wants of the system require. Sometimes less than is really needed must be taken when digestion is very weak. Strength depends not on what is eaten, but on what is digested.

6. Never take violent exercise of any sort, either mental or physical, either just before or just after a meal. It is not good to sleep immediately after eating, nor within four hours of a meal.

7. Never eat more than three times a day, and make the last meal very light. For many dyspeptics, two meals are better than more.

8. Never eat a morsel of any sort between meals.

9. Never eat when very tired, whether exhausted from mental or physical labour.

10. Never eat when the mind is worried or the temper ruffled, if possible to avoid doing so.

11. Eat only food that is easy of digestion, avoiding complicated and indigestible dishes, and taking but one to three kinds at a meal.

12. Most persons will be benefited by the use of oatmeal, wheat meal, or Graham flour, cracked wheat, and other whole-grain preparations, though many will find it necessary to avoid vegetables, especially when fruits are taken.

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

To Make Plaster-Casts.—To take a plaster-cast of the face of a living person, proceed as follows:—Let the person lie down on his back, an oil-cloth or other material being placed under the head to protect the bed or lounge. Anoint the face, which ought to be as smooth as possible, with almond or any other bland oil, and cover any hairy portions, such as eye-brows, moustache, or beard, with hot flour paste, which should be allowed to become somewhat dry, though it is not necessary to wait long. The object is to preserve the contour or outline of the hair-tours, while, at the same time, preventing the plaster from getting into the hairs. Flexible collodion may also be used, either on the hairy portions alone or all over the face. A thick cloth is passed around the head, closely fitting to the latter, the object of which is to limit the extent of the cast, that is, to prevent the still moist plaster from flowing round to the back of the head. Everything being ready, two metallic or pasteboard tubes are inserted in the nostrils, to permit the person to breathe, and the previously prepared paste, made of the best dentists' plaster is immediately poured on. It should set rapidly, and may be removed without trouble. From this form, properly oiled, and, if necessary, trimmed and improved by hand, casts of the face may be made by oiling and filling with plaster-paste. The same method is followed in taking plaster-casts of other parts of the body, or of the whole body itself. In the latter case, it is necessary to subdivide the surface into such a number of parts that they may easily be handled. The pieces are taken one after another, so that the contiguous pieces which had been cast previously are applied to the body. In this way the boundary of the next pieces is exactly defined. It is also advisable to imbed stout strings lengthwise into each cast, so as to be able to lift it without getting hold of the edges. When putting it together for the purpose of making a cast of the whole body, the strings must be so situated and of such a length, that the parts can be well bound together. This is to be borne in mind while laying out the plan for making the cast.

Cold Cream.—Mr. Ad. Vomacka gives the following formula and directions for cold cream, in the *Seifenfabrikant*:—White wax, 200; spermaceti, 500; oil of almonds, expressed, 1,600; rose-water, 80 parts; oil of rose, for each 2.4 kilos., 30 drops. Melt the wax and spermaceti at a gentle heat on the water-bath, pour the mass into a very shallow, warmed porcelain dish, and let it stand over-night covered with paper. Next morning, begin to work the hardened mass by a gentle, uniform to-and-fro motion of the pestle, which should be held lightly between the fingers without exerting pressure, commencing at the edge, gradually working towards the middle, and mixing the whole thoroughly. The prescribed amount of rose-water is now slowly added, in a thin stream, and while constantly stirring. If desired, 5 grms. of borax may be dissolved in the rose-water, which will facilitate the combination. The mortar is now well covered and set aside for one or two days, in order to give the fat a chance to combine with the water. It is then again briskly stirred for a quarter or half an hour, and, finally, the oil of rose is added, previously dissolved in a little castor oil, which latter imparts to the cold cream an extremely handsome dull lustre. . . . . The readiness with which cold cream becomes rancid or acid makes it advisable to add to it some suitable preservative, if it is to be kept for any length of time. A very good method is to add a small quantity of salicylic acid dissolved in rose-water or sweet spirit of nitre. In place of oil of rose, other oils or mixtures of oils may be used, as for instance:—1. Oil of neroli, 10 parts; oil of rose, 5 parts; oil of lemon, 15 parts. 2. Oil of bergamot, 9 grms.; oil of lavender (finest), 3 grms.; oil of rose, 35 drops. 3. Oil of lemon, 5 parts; oil of lavender (finest), 5 parts; musk, 0·4 parts.

Vaseline Cold Cream.—This is prepared in the same manner as the above, and the ingredients are as follows:—Spermaceti, 150 parts; paraffin, 150 parts; Vaseline, white, 1,000 parts; rose-water, 600 parts; oil of rose, to every 2·4 kilos, 30 drops.

HOW TO GET THIN.

An old writer tells us that the most tragic spectacle on earth is to see a virtuous man fighting against an adverse fate. The case of William Banting may stand side by side with such, says a writer in the *Neue Freie Presse*, for he, unhappy mortal, had for above thirty years to fight without result against an over-freight of 50 lb. of fat. Trivial as this may appear to thin people, it is often a question of life and death to those victims of corpulence who, being possessed of a sensitive mind and cheerful constitution, have to go through life bearing all the moral humiliations and other more material discomforts to which people of an

excessive *embonpoint* are subjected by their unfeeling fellow creatures. Mr. Banting could not find the strength to regard with Olympian indifference the sneers and smiles which his unfortunate person attracted. He retired into solitude, and there for a long time made vain endeavours to rid himself of his disease. For years this seemed impossible; he grew weaker and weaker by following the prescriptions of the physicians, which all tended to the one point, that to become less corpulent a rigid diet must be kept. But suddenly a new method was invented by the hard-pressed man; he tried it, and who could describe the delight of the sufferer, when slowly but steadily his stoutness, and with it all the other symptoms of disease, began to disappear. Every one is acquainted with the principles of the "Banting system," which the happy inventor described for the good of his fellow men, in a publication where we often meet with bursts of enthusiasm, such as almost convert the book into a hymn of praise. In the German translation some hitherto unmentioned prescriptions have been added: one of them, more curious than wise, but entirely harmless, is "to allow the mental powers to become more active"—a piece of advice which perhaps it would be difficult to follow by those who have not to compose a "Divina Commedia," which, as Dante himself tells us, kept him thin.

A new book on "Corpulence, and its Treatment," has lately been published in Germany by Professor Ebstein, of Göttingen. He is not, like the English "saviour of the stout," full of overflowing thankfulness for relief from his disease; probably he has not even suffered from it, for corpulent men are rarely stern and strict. His method also differs from that of Banting. According to Ebstein the primary cause of corpulency is the want of sufficient energy to renounce the so-called attractions of life. He firmly maintains that fat is produced merely by over-eating and drinking. Water and drinking cures are altogether condemned by Professor Ebstein; and while the Banting system teaches that "fat makes fat," this doctrine is directly opposed by Professor Ebstein, in whose ideal of fare for those suffering from corpulency fat forms a great feature. "The 250 grammes of bacon," says Professor Ebstein, "which our Emperor ordered to be delivered daily to all soldiers taking part in the French campaign of 1870, are, so to speak, an official acknowledgment of the importance of fat in the rational nourishment of a hard-working man." The annexed bill of fare is that proposed by Professor Ebstein for an average case of corpulency, the invalid being supposed to be forty-one years of age, and having suffered from increasing stoutness for twenty-five years. The disease is supposed to be contracted by insufficient bodily exercise, a diet consisting of such things as are hurtful, among which are named all sweet dishes and those containing much albumen, and those devoid of a sufficient quantity of fat.

Breakfast.—A large cup of black tea without milk or sugar; 50 grammes of white bread, or toasted brown bread with plenty of butter.

Dinner.—Soup (frequently and with bone-marrow), 120-180 grammes meat, boiled or roasted, with fat gravy—fat meat being preferable; a small quantity of vegetables, particularly leguminous, but also all kinds of cabbage. Turnips are excluded, because of the sugar contained in them; potatoes are altogether excluded. After dinner some fresh fruit when in season, as dessert; a salad of baked fruit without sugar. Two or three glasses of a light wine. Soon after dinner a large cup of black tea, without milk and sugar.

Supper.—In winter regularly, in summer occasionally, a large cup of black tea without milk and sugar. An egg or some fat roast meat, or both, sometimes fat ham, smoked or fresh fish, about thirty grammes of white bread, with plenty of butter, and occasionally a small quantity of cheese and some fresh fruit.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

(SECOND PAPER).

"Let us now begin our first lesson."

"Delighted, I'm sure!"

"Yes; we are most anxious to test your powers as an instructor!"

"Well, girls, are you ready?"

"Yes, quite."

"Now, form up in line; the first exercise will be one that will enable you to turn round easily, and without such awkwardness as Miss Ethel does at times—that is, I am going to put you through your 'turnings.' Stand in this position—heels close together, toes turned out on an angle of forty-five degrees to the front, arms hanging loosely by your sides, head erect, eyes looking straight to the front, chest thrown forward, and shoulders put in an unrestrained position. Now, on the word 'Attention,' straighten the knees and stand still. Now, girls, don't laugh; there is such a word in the dictionary, and must be used. In the command, 'prepare for exercise,' raise the left arm, bending it at the elbow, letting the hand rest on the hip, and each one but the pupil on the extreme right take a side pace to the left. You will thus be clear of each other, and will not jostle one another in turning. On the word 'Two,' drop the left arm and come to 'attention.' Now, girls, there are three positions I want you to learn: First, to turn round to the right; second, to the left; and third, to turn the body completely round, so that you face the opposite direction to the present. In making these turnings, you must not budge an inch from the ground on which you stand; and in the act of turning you keep the heels firmly on the ground, the whole weight of the body resting on them, all the movements being done by raising the toes and swinging the body round on the heels. Remember that this is the only way to preserve your balance and keep the body from swaying about. Let the arms remain perfectly still by the sides, fingers pointing to the ground, and palms of the hands turned inwards, thumbs to the front. Keep your eyes off the ground, and look straight before you. On turning to the right, you will face a position at right angles to the present one, and you will have to perform two movements to execute this turn. You will on the word 'One,' draw back the right foot (the knee kept straight), place the hollow of the foot against the left heel, and remain steady. On the word 'Two,' swing the body round, balancing the weight on the heels, and remember not to fling your arms about. One! Two! Well done. Now, in turning to the front again, that is, to face me, as before, all you have to do is to reverse these movements thus:—On the word 'One,' place the heel of the right foot in the hollow of the left, and at

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

the word 'Two,' swing the body round to the left until you face me. One! Two! That's it. Now you observe that although you move the right foot, the left foot has never moved from the spot it was originally placed on. Now you are facing me; to turn to the left you have only to repeat the last mode of turning, thus: On the word 'One,' place the right heel in the hollow of the left foot, and on the word 'Two,' swing round, when your feet will be in the position they now are, that is, thrown out from your body at an angle of 45 deg.

"To turn to the front again is to perform the movements executed in turning to the right. Now, it is obvious that if you turn to the right four successive times, you will be fronting us as at present—thus, on the first turn to the right, you will face your right; on the second turn you will reverse your present position; on the third turn you will be looking toward the left; and on the fourth turn you will be facing me again. Just so in turning round to the left, at each turn you make a quarter circle. But to reverse your present position—that is, to turn your back towards me, there is a much quicker way than making the half-turns. This turning is executed in three movements. Thus, on the caution word 'Right about turn,' you will remain steady until I give the word 'One,' then draw back the right foot, and place the ball of the toe against the left heel. On the word 'Two,' swing the body round through a half circle until you reverse your present position, and remain steady, until I give the word "three," then draw back the right foot and remain at attention. On the word of command, "front turn," make exactly similar movements and turn towards me, swinging round to your right. Now, throughout these movements you have done them fairly well, but you have been unsteady. I could not expect you to do them perfect at the first trial, but when by yourselves you can practise them, remembering that all the movements should be done methodically, and in regular time, until you can do them perfectly. Avoid flinging the arms about, or swaying from side to side, and be sure and remain steady after each movement until the word of command is given to do the next. Thus only will you gain perfect control over your movements.

"Much of the value of systematic training consists in this control of the will over involuntary movements, but by methodicity you become so habituated to the action, that you can perform it automatically.

"Thus, an old pensioned-off soldier was seen carrying his dinner away from the bakehouse. Some one smartly called out, 'Attention!' Down went the man's arms by his side, and he straightened himself up in a moment, unconsciously dropping the dinner he was carrying, so habituated had his mind become to obedience to commands.

"The use of the movements just gone through is to give you power over the balancing of the body and render each movement graceful in turning round. The most graceful skater is that one whose movements seem to be done without an effort, and thus by these 'turnings' you will be able to glide about without awkwardness."

Sore Nipples.—Dr. Favre is of opinion that there are two varieties of these, fissures and erosions, and believes that the latter are to a large extent due to tight-fitting dresses and pressure by corsets. He advises that the nipples be sprinkled with bismuth, dry, or that this be made into an ointment in the proportion of one of bismuth to two of vaseline. This procedure has often resulted in a cure within twenty-four hours.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

The Art of Washing. By A. A. Strange Butson, author of "On the Leads." (London: Griffith & Farran, St. Paul's Churchyard. Dutton & Co., New York. 1880.)

The saying, "Cleanliness is next to godliness," is so familiar to all, and so generally approved of, that we have known persons who believed it to be a quotation from the Bible. It is certainly worthy of notice that personal washing in olden times was closely associated with religious ceremonies. The rigid commands laid down to the Jews, included many in which the bathing of the body, or parts of the body, held a prominent place. In later times, in our country, the ceremony of bathing preceded the bestowal of knightly honour; while, to this day, in Mohammedan countries, no True Believer prostrates himself with his face towards Mecca without first washing his feet, his hands, and his head. These facts show that cleanliness of body has, in all ages, been connected with purity of mind; and, although we too often find lowness and meanness of soul in a perfectly well-cared-for body, there are few who would be willing to believe that a pure and lofty mind could be content to keep its "earthly tabernacle" in a squalid and filthy condition.

In the book before us, which is printed upon tinted paper, and altogether daintily got up, as a book on such a subject should be, we find the art of washing fully treated of under three heads; viz., 1. Personal washing; 2, clothes washing; 3, house washing. Of the three, the first is naturally the most practically interesting to the majority of people, as nearly all of us, who have arrived at the years of discretion, have the charge of our own bodies, and the power of keeping them in proper order. In the olden times, as the author tells us, the Romans were famed for the number and luxuriousness of their baths, both public and private. They rightly regarded the use of water, hot and cold, frequent and plentiful, as a means towards strengthening and beautifying their persons. In our day, we English pride ourselves on our love of soap and water; and those of us who have travelled on the Continent may have felt inclined to wish that the Romans had spread their knowledge of this art more widely. While endeavouring to perform our customary ablutions in the small *soup-plates* which are provided for the purpose] in many foreign hotels, the utility of foreign ideas of washing and cleanliness may be thoroughly estimated.

It is a well-known fact, but seldom realised and rarely remembered, that the skin is one of the greatest safety-valves of the "fearfully and wonderfully made" human machine; that the millions of little perspiratory tubes with which this most intricate and beautifully-organised covering is pierced, throw out from the inner system an average amount of thirty-three ounces of greasy refuse and worn-out material in an hour, in the form of invisible perspiration, and in the same time often as much as from two to three pounds in visible perspiration.* Perspiration there must be, or the health of the individual will suffer; therefore the great thing is to keep the skin machinery in efficient working order. Should the little tubes or pores be allowed to remain choked with their own secretions, the refuse matter is thrown back into the other great corporeal scavengers: the lungs, stomach, liver, or kindeys. To assist and ensure healthy action, woollen material, no matter how thin, should always be worn next the skin, and the same garment *never* retained at night.

* The author must mean daily instead of hourly. The skin gives off, under ordinary circumstances, from 1½ to 2 lb. of watery vapour *per day*, whilst her estimate of the other refuse is certainly highly excessive.—Ed. H.

The author does not, in spite of the traditions of our nursery days, the horrors of which must be fresh in the minds of many of us, strongly advocate perfectly cold baths, either for children or grown people. The agony caused to many delicate children, through the ignorance of mothers and nurses, by making them stand in cold water, often in a cold room in the depth of winter (while frequently the process of bathing is anything but a brisk one), must in a good many cases make the daily bath, instead of being a pleasure and a luxury, a very trying ordeal to the shivering little victims. To none but the very strongest, is a perfectly cold bath in cold weather either pleasant or profitable. The water as a general rule should be of the same temperature as the body, so that no disagreeable shock is caused by plunging into the bath; while on no account (in the case of a daily bath) should it be so warm as to prevent an invigorating and refreshing sensation on emerging. To those who have the accommodation and the desire, the directions given for a bath in the "Art of Washing" are perfect, and tend to render the morning ablution an inexpensive and healthy luxury.

In the first place, you must be provided with a perfectly clean bath, a fresh, clean sponge, and one of those pretty fibres called *loufs* (erroneously named loophars), which are the inside seed-membranes of a large gourd, growing freely in warm countries, such as Italy and Egypt. I strongly recommend them as a clean substitute for the old conventional piece of flannel so intimately connected in our minds with the terrible "tub-nights" of our nursery days. . . . . Your soap may be what you like best, avoiding one unpleasantly scented. . . . . The choice of towels is also a matter of taste, and it is one in which experience and sensation must guide you, for skins are so differently sensitive, and very rough towels are no more advisable than the very smooth ones necessary only to quite young children; but it is well always to have a large towel or bath-sheet to throw over you in coming out of the bath. These, then, are your implements. Now fill your bath with warm (not *hot*) water. Soap your louf, and proceed to the soap-scrubbing course; and remember that it is not sufficient to smear yourself with a lather, but each crevice and cranny must be conscientiously "holy-stoned" with your louf. This being done . . . . pour into your bath a large canful of cold-water, and with a fresh clean sponge thoroughly and effectually rinse every vestige of soap from your person; then, like a dripping water-dog, jump out on a strong rough towel, previously spread on the bath-blanket that underlies your bath, and, throwing round you the large bath-towel, begin to dry yourself."

There are in this useful little book some valuable hints regarding the washing of infants, those "tender plants" who require such gentle and constant attention. Some very sensible remarks are made also on the care and cleansing of the teeth and hair, both of which, when well cared for, are such pleasant additions to personal beauty, and so disagreeable to look at when neglected. We have not space to go into the details of these observations, nor to quote the author's useful hints as to the manner in which our washing implements may be kept in perfect order; but for those whose houses are not fitted with bath accommodation we give the following extracts:—

No one need excuse himself from having a good wash on the plea of not possessing a bath, for this may at all times be accomplished after Miss Nightingale's plan, in the rules she laid down for the lady nurses who accompanied her to the Crimea. Even if they had but the poor accommodation of a small basin, they were to thoroughly sponge themselves from "top to toe" daily; and to the poorest of us this is possible. Added to this, few things are more refreshing and valuable to health, for those in attendance in the sick-room, than a daily bath, even after a night of sleepless watching; and whilst cleanliness can never be overdone in the person and surroundings of the sick-nurse, we have Mr. (now Sir) Erasmus Wilson's authority that "no harm can arise from too frequent ablutions; much evil may result from their neglect." A motto every individual should lay to heart . . . . . .

Many persons say, "I could not waste so much time about washing as you propose." Setting aside the pleasure and comfort of being clean, be assured that no time is wasted in securing an efficient and healthy state of our "earthly tabernacle."

And we might add that if any one has not time to perform the daily ablutions necessary to health and perfect cleanliness, it is because the time has been *wasted* in some other way; in most cases, we fear, in bed.

Through want of space we are obliged to comment very lightly on the second and third parts treated in the "Art of Washing," viz., clothes and houses. It is, however, needless to say that these are subjects quite as important as, and closely connected with, personal cleanliness. We should strongly advise all those who are interested in the everyday trifles—so-called—which conduce to a happy, healthy life, to study this interesting little book; and even those to whom the many hints are familiar will not feel that they have wasted time in recalling them to their remembrance.

At page 51 we notice a printer's error, where *unties* is substituted for *unites*.

The Parents' Medical Note-Book. Compiled by A. Dunbar Walker, M.D., C.M. (London: H. K. Lewis, Gower-street, W.C.) 1884.

This little book is intended to enable parents to keep a careful record of the diseases through which their children pass—a record which would be of the utmost value to medical men, "enabling them rightly to interpret symptoms which otherwise would be unintelligible." But it does more than this, enabling them to keep an account of the physiological, as well as pathological, status of their children, at any rate for the first two and a half years. We find columns in which to record the increasing weights of the child during each succeeding month, and we would suggest the insertion of a similar column in which to record the growth rate. There are also columns to record the quantity of food taken and the hours of sleep, and a whole table is devoted to the dentition crisis. Four columns are devoted to each disease, and these are headed —1, date; 2, age; 3, duration; 4, after effects; and on the page facing each table a short description of the disease and its usual sequence is given. We heartily recommend this note-book to the use of parents, as when properly filled up it will not only be of the greatest value to the individual whose early physical history it details, but, in accordance with the laws of heredity, when that individual in turn becomes a parent, it will be a useful guide to the solution of many questions affecting his or her children.

Sanitary Appliances, Etc.

DR. DUNBAR'S "ALKARAM."

This well-known preparation consists of a combination of substances enclosed in a tightly-stoppered bottle, and adapted for inhalation in cases of "coryza," nasal catarrh, or "cold in the head." Every one has experienced the disagreeable sensations proper to this latter affection, which is related to the familiar "hay-fever" itself. The "Alkaram" has a pleasant and pungent odour, and on the approach of the symptoms of cold only requires to be inhaled or sniffed so as to arrest the symptoms; while, even when the cold has become established, this preparation relieves the head-tension which constitutes such a marked feature of the affection. The action of "Alkaram" appears to be that of destroying, by inhalation of its vapour, the microscopic *bacilli* and other lower organisms which probably cause the disease, and which, being transmitted from a patient to healthy mucous membrane reproduce the symptoms of the cold. In this light, "Alkaram" is a medical agent of high value and of scientific kind. We may add that it is thoroughly safe to use in every respect.

SCOTT'S MIDLOTHIAN OAT-FLOUR.

Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-Flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind. The Midlothian Oats have long been celebrated for their high quality, and the flour prepared therefrom is found on chemical analysis to contain nearly 13 per cent. of flesh-forming matter, in addition to nearly 9 per cent. of oil, and 65 per cent. of starch. The vegetable fibre has been removed, and the preparation is therefore of the purest kind, and contains nothing save highly nutrient substances. A variety of agreeable dishes can be prepared from this flour, and those who have grown weary of the ordinary "corn-flours" may with advantage give the "Midlothian Oat-Flour" a trial. There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins. For young children this flour may also form a convenient substitute for porridge, when that dish becomes distasteful.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," *74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

CHILDREN'S DRESS.

Dear Sir,—I have noticed the correspondence which has passed in your journal between Mr. H. Maxwell and Miss Ada Ballin on the above subject, and it is to a remark made by Miss Ballin in No. 42, that I now wish to refer. She says she is "not at all favourably impressed with the appearance of those young ladies who have renounced the use of corsets. They all look limp, invertebrate creatures," and she "has not seen one without a confirmed stoop." I could point out to Miss Ballin many ladies of my acquaintance who have never worn stays, and who neither look limp nor stoop; in fact, I have been particularly struck with the erectness of their carriage. My mother, who is near sixty years of age, is *much straighter* in the back and shoulders than most of the *young* ladies whom I know. She never leans back in a chair, and does not appear to need *any* artificial support whatever. She has never worn stays for an hour. My opinion is that when a person commences to wear stays she is far more inclined to stoop than before, and as to the figure, the one without stays is far more graceful and pleasing to the eye than the hard, bony-looking structure we so often meet. I am very glad the outcry against this article of dress is becoming so decided, and I hope much good will be the result. To put children and growing girls into stays is simply outrageous. All the young muscles, so delicate and beautiful, should have full play to develop healthily as Nature intends them, and not be crushed and confined as they must be even by the most innocent description of stays. The more room these growing muscles have, the less deformity there will be, for Nature in her healthy development never deforms. Let us allow natural growth, and we shall have healthy and vigorous bodies.—I am, yours faithfully, M. Casson Grundy.

Manchester, *February* 9, 1884.

Liverpool, *Feb.* 1, 1884.

Dear Sir,—I am quite satisfied with the reply of your contributor, Ada S. Ballin, to my letter of December 31. It shows how difficult it is to eradicate from the mind ideas acquired in early life.

In this case your contributor has evidently been taught at one time that Nature has not done everything for us, and that to complete her handiwork in a proper manner, among other things a boot-maker is necessary, one who can make boots to fit a two-year old foot in the manner she describes, or else "deformity by spreading" is inevitable. It just occurs to me that the deformity alluded to is merely the shape of a properly developed foot, a thing which your contributor and many others have probably never seen.

I have read the opinions of many writers on this subject, and all advocate the use of boots sufficiently large to allow the feet to spread, and caution everyone against the use of those which in any way cramp the foot, or prevent its proper "play" while walking.

I will say nothing more on this subject, but I should like to see an expression of opinion from some one of experience respecting "deformity of the feet by spreading."—Yours faithfully,

H. Maxwell.

WATER-PIPES AND HEALTH.

Sir,—In the article on the above subject in Health, mention is made of the difficulty of finding a proper substitute for the dangerous lead water-pipe, and that, if the Bower-Barff process can be made a practical success so that a perfect coating of the black oxide of iron can be guaranteed in the interior of small size iron pipes, we shall have in it the ideal pipe for such purposes. I have just read a paper on the preservation of iron in the minutes of the proceedings of the Institution of Civil Engineers by Mr. B. Thwaites, C.E., from which it appears that the Bower-Barff process is now practically perfect, and the best means of preserving sanitary ironwork. It states that it is necessary the water-pipes, if of wrought-iron, should be fitted before being treated by the process. Apologising for trespassing on your valuable space, I remain yours truly, C. E.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.

GENERAL.

D. Gibson.—If you require copies of Health, write to the publishers, and enclose stamps.

Oxon.—We have never heard of the process to which you allude.

B. George.—Ammonia in small quantities is exhaled in health from lungs, skin, and kidneys.

Austin B.—See Dr. Carpenter's "Mental Physiology."

Bessie R.—There need be no hesitation in trying the remedy, but we do not think it likely to be successful in your case.

A Working Man.—The following works will suit you:—Wilson's "Healthy Houses" (5s.), and his "Handbook of Hygiene and Sanitary Science" (10s. 6d.), (both published by Churchill); Weatherley's "Ambulance Lectures" (Griffith & Farran); "First Aid to the Injured" (Smith, Elder, & Co.).

SANITARY.

Interested.—In some moorland districts water may contain from twelve to thirty grains of vegetable matter. Imparting a brownish tint.

Ongar.—See our articles on "Cottage Hospitals," by Dr. Gibson.

A. C.—There is a syphon trap recommended in the model by-laws of the Local Government Board. Various ventilating traps have already been described in Health. Amongst these, Buchan's, Banner's, and the Edinburgh air chamber trap may be mentioned as being highly satisfactory.

MEDICAL.

Bromptonian.—For ring-worm we should recommend you firstly to attend to your general health, and to take cod-liver oil and iron thrice daily. Try painting with acetic acid as an application to the spots.

Antonio.—What you mention is perfectly natural, and rather a

sign of health than otherwise. You might try Rowlands' Macassar Oil for the hair. A little of this goes a long way, and it is a pure preparation.

S. E. R.—Your deafness must be remedied by an aural surgeon, although the tonic recommended to "Ajax" in No. 44 HEALTH, should be tried by you as a general restorative medicine. 2. The pupils of the eyes are naturally large in some persons. 3. Attend strictly to cleanliness, wash night and morning, and bathe with water in which a little Condy's Fluid has been placed.

R. R.—We know nothing of the practice of the two persons you mention, but both advertise, we believe, and certainly the charge you name seems excessive. You have learnt the lesson experienced by a good many persons that medical men who advertise are in no sense superior, but often inferior, in knowledge and ability to ordinary practitioners. If you are ever in want again of a reliable opinion we will be glad to send you the address of a trustworthy physician.

BERRY.—1. We have no faith in the preparation you allude to. 2. Try the effect of the tonic recommended to "Ajax" in No. 44 of HEALTH. 3. The system is a good one, we believe, but you yourself must judge of its excellence.

KATHRINE.—Your symptoms are those of indigestion. We should advise you to give up tea entirely and try a little milk instead. See also to your general health.

AGONIZED.—See advice given to "A Sufferer," in present number of HEALTH, and attend specially to instructions regarding the employment of fomentations to the painful joints.

F. R. J. M.—You entirely mistake the opinion to which you allude. Because albino children have been known in one case to follow the marriage of first cousins, there is no logic or reason in the idea that the children of such marriages must invariably be so. If first cousins are perfectly healthy, there is no reason why marriage in such a case should not be undertaken.

DIABETES.—No articles have appeared. The disease is a highly insidious one, requiring careful medical watching; and is likewise too technical in its nature for you to understand it. The treatment you mention is that usually adopted. You might write to Mr. Van Abbott, of Princes-street, London, W., for his catalogue of foods specially prepared for diabetic patients.

C. E. L.—We should recommend you to give up all extra work, to rest as much as possible, to take a change of air, if it can be managed, and to try for a time the tonic recommended to "Ajax" in No. 44 of HEALTH.

GEN-EL-WORE.—Your sheet anchor of hope is strict attention to your general health. Avoid all excitement. Rest as much as possible, and take moderate open-air exercise. Yours is not a case for drugs, unless any of your former symptoms should supervene.

W. H.—See advice to "Gen-el-wore" above. If at all low in health, the tonic recommended to "Ajax" in No. 44 of HEALTH might be tried; but yours is evidently a case in which your general health requires looking to. The quack pamphlet you enclose is a fair sample of its kind.

A. Z.—1. Depends entirely on choice; we should say neither over high nor too low. 2. Dumb-bells should be used, for preference, in the morning, not at night. 3. We entirely agree with you that a perfectly natural and upright carriage can be maintained without the aid of stays.

HOPEFUL.—1. No cause to be alarmed whatever. But do not drink too much tea. Consult, for your eyes, the surgeon in charge of the eye department of your nearest hospital or infirmary.

GEORGE BALCOMBE.—Chocolate cake, if thoroughly pure, is not in the least degree injurious to young children; but we should not allow a child of the age you mention to have a large supply of the sweetmeat named, or of any other sweetmeats.

LINCOLN'S INN-FIELDS.—There is no doubt that if the silk be sufficiently thick it is quite as effective protection as wool, always provided that you wear a sufficiently heavy under-shirt above the under-garment. We are believers in the practice of making the garment which is next the skin somewhat light, but absorbent, and of wearing a thick flannel above this.

VECTIS.—It is possible that you are merely suffering from some local irritation of the ear. We should strongly advise you to have your ears thoroughly examined by a competent aural surgeon. We remember a case somewhat similar to yours being caused by a collection of wax in the ear. Frequently some irritation of the nerve of hearing is produced by similar conditions, and an examination such as we suggest may relieve all your symptoms.

BYRON.—The tonic you name is the best we possess. It contains phosphorus in a form readily assimilated; it also contains iron and other drugs.

A READER (will please use some more distinctive name in future). We think that the illness from which you have suffered has left you in a highly-nervous state. The best remedy we can prescribe is that of a complete change to the seaside. Look well to your digestion, and for a time let your food be light and consist chiefly of milk and strong soups. Yours is not a case for drugs.

H. T. W.—The pains you complain of are liable to shift about, and may certainly arise from indigestion. We should recommend you, as a piece of preliminary advice, to rest after food, and to take a little of Morson's "Pepsine" with your food.

CAMBRIA.—It is just possible that smoking late at night may account for some of your symptoms, but we should advise you to give up all aperient medicines, and let your food be light and nourishing, and to include plenty of vegetables and fruits. See also that you rest after taking food. If for a time you will be content to live on extremely simple fare, chiefly soups, you will effect a cure.

MUSCULAR CONTRACTION.—It is quite evident that you have been doing far too much, both in the way of work and recreation, and are hence suffering from the effects of over exertion. We should strongly recommend you to rest as much as possible, to take warm baths once or twice a week, and to try the tonic recommended to "Ajax" in No. 44 of HEALTH. There is no doubt that rest, and possibly a change of air, are the main points in your treatment.

F. WENLOCK.—Before we can tell whether football is injurious or not, in your case we would require to know something of your physical constitution. Speaking generally, we should not recommend any one in your position to indulge suddenly once a week in any active exertion. You will find that a daily walk will be much more serviceable to you than a weekly game of football, with all its attendant risks of strain.

AMATEUR ATHLETE.—You evidently suffer from chronic cold, for which we should advise you to take during the winter a dessertspoonful of cod-liver oil after meals as a strengthening remedy. When the cold is annoying, you might try an inhalation for five minutes at a time of the following:—Oil of pine, 2 drachms; heavy carbonate of magnesia, 1 drachm; water to make up 3 oz. A teaspoonful to be placed in a pint of water at 150 degrees F. for each inhalation.

JUVENIS.—We have given you a recommendation to try "Pepsine," and it is in your own option to follow our advice or not. The price you mention as charged for the "Pepsine" is excessive. It is much cheaper. Try Morson's preparation.

C. T.—We do not know of any home which would suit you, but as you certainly cannot go to the country or seaside until you are thoroughly cured of the fever, we should recommend you to select any bracing seaside place, and simply to take apartments there, or to visit any of the hydropathic establishments which are now so numerous at various health resorts. Bourne Hall, Bournemouth, is a good "Home" for such cases as yours, if the tariff is within your means.

JACQUES.—1. Enlargement of the tonsils may be due to various causes, and often unconnected with constitutional peculiarities. We should strongly recommend you to give the child cod-liver oil, to which syrup of iodide of iron has been added. If the glands continue troublesome we should recommend you to have them removed. 2. In the other matter to which you allude, we should recommend you to give the tonic prescribed to "Ajax," in No. 44 of HEALTH a trial. The debility probably arises from simple want of tone.

CONDUCTOR.—We should recommend you to practise cold sponging each morning. The tonic you are at present taking is the best you could use. You must not be morbid, and by the aid of cheerfulness you will in time get quite well. Yours is a sample of the cases on which quacks flourish.

JAMES.—Firstly, moderate dumb-bell and trapeze exercise will increase chest width. Secondly, no tooth-wash is effective for keeping the teeth clean. You require a tooth-powder. Use camphorated chalk.

NERVOUS JACK.—What you complain of is not uncommon. But you entirely mistake the nature of the secretion to which you allude. You should take a simple tonic, and probably the use of cold sponging will be found to remove your complaint. 2. If you will let us know in what quarter you desire to find the gymnasium about which you inquire, we shall endeavour to give you a satisfactory reply.

CITIZEN.—We have no confidence in the preparation you name. You probably suffer from the sudden exertion. But as there has been no return of the bleeding, we should simply advise you to guard carefully against cold, and if the cough should return, to consult a physician. You might meanwhile try the effect of the tonic recommended to "Ajax" in HEALTH, No. 44. A course of cod-liver oil would also do you good. A desertspoonful thrice daily after meals.

WALTER HOWARD.—We think yours is a case in which you should consult with a surgeon, as he alone will be able definitely to ascertain the exact nature of the swelling of which you complain. Follow this advice, and state fully your symptoms to the surgeon.

A. E. or A Reader.—[You should choose one cognomen, not two.] See advice to a "City Clerk" in Health, No. 43. You must not take cod-liver oil at night. Don't be alarmed, as, by attention to our advice indicated, you will get quite well.

Shandon.—Yours is a case in which you should undergo a thorough examination by a physician. There are indications in your statement that such a course is advisable, and your mind will be relieved thereby.

Harry.—Do not be nervous; you are somewhat excited over your troubles, which, after all, only require strict attention to the general health that they may be overcome. You might try a change of air, if possible, and the advice given to "Countryman," in Health, No. 44, applies to your case; and the treatment therein indicated should be persevered in thoroughly. Write again, if not better.

Paul Jones.—Try the effect of applying a little "Vaseline" before and after shaving. What you complain of is natural to some complexions.

Scotia.—We cannot see any good we can do you, when by your own confession you are so nervous that you have even a distrust of medicines which may be prescribed for you. We are of opinion that your troubles are chiefly mental, and, in all probability, increased by the indigestion of which you complain. You might try the effect of taking a little "Pepsine" daily with your food.

Compositor.—You do not say what you take for dinner, and we cannot, therefore, pronounce any opinion upon the merits of your dietary. Three meals a day are necessary for you, but the interval between your dinner and tea is certainly too long.

Alga.—We think in your case that a dietary in which vegetable and fruit form prominent items would tend to cure the constipation of which you complain. You might likewise try a little "Pepsine," and for the pimples the following powders:—Sulphide of lime, 24 grains; sugar of milk, half an ounce; mix and keep in a stoppered bottle. Take as much of this powder as will lie on a sixpence every four hours.

Canton.—In a healthy person what you name may occur once weekly without injury, or even more frequently, according to constitution, for much depends upon the individual peculiarity. In your case the violent exercise in which you indulge probably affects you through your nervous system, indicating thereby its unfitness, and advisability of your indulging in some less violent form of recreation. You might try the effect of "Kreochyle Liquid Food."

L. C. O.—We think with advantage you might try the mixture recommended to "A Foreigner," in No. 44 Health as a corrective to the indigestion from which you suffer. Let us hear the effect of this advice.

Uddingston.—So far as we see, you have no need to be nervous. We should recommend you, if your work is below ground, as we suppose, to endeavour to obtain a change of employment. See likewise to your digestion, for, as your medical men have informed you, the symptoms of which you complain more frequently arise from the stomach than the heart. See that your food is light but nutritious, and take a little "Pepsine" with your meals.

W. S.—We should recommend you to give the patient 15 grains bromide of potass, each alternate night, in a wineglassful of water, on going to bed. In such cases it is sometimes advisable that a little light supper be taken about an hour and a half before retiring to rest. Sleeplessness in old persons is often caused by fasting before retiring to rest.

Draughtsman.—What you mention regarding your own and the other case is extremely curious, but not altogether unknown in the history of skin diseases. Change of diet, in conjunction with individual peculiarity of constitution, often produces such results in certain cases. No one law can be laid down for all cases. We imagine that a diet of which vegetables and fruit form a marked proportion might suit you; and such a food experiment is certainly worth trying in your case. It is possible that milk may not agree with you, and hence, as the result of experience, it is well to avoid that fluid. If you wish to try a form of treatment much in repute, you might use an ointment consisting of one drachm of chrysophanic acid added to two ounces of lard. A small part of this should be rubbed into the spots daily. It will stain the skin and linen and must be used carefully. Another method of cure is by keeping patients in a tepid bath of 90 deg. Fahr. five hours a day for six weeks. A tedious process, but one apparently very successful.

Amy.—What you mention is possible. We cannot say more.

J. D.—The treatment we should recommend you is simply to pay strict attention to cleanliness, and to apply a little pure Vaseline continually to the parts. You do not suffer from any disease.

Charles Johnstone.—You should try the effect of making vegetables a part of your food, fruits, such as apples, and try stewed fruits as well. A tumbler of cold water taken first thing in the morning on rising may also do good. Beware of getting into the habit of taking aperients.

E. V. L.—In the treatment to which you refer milk and eggs form prominent parts of the diet, and not the sole articles consumed; for example, the patients, except under certain circumstances, would dine on ordinary fare. If you wish for further information, address the physician himself.

Lina.—If you will consult the advertising columns of the *Lancet* or *British Medical Journal* you will find advertised therein homes and establishments of the kind to which you refer. You will be able from the list there found to select that best suited to your requirements.

Expectancy.—You are quite well. You should know that what you complain of is really a sign of good health. So long as your condition remains as at present, you have every reason to rejoice in the possession of health. Only quacks would persuade you differently. Use cold sponging each morning, and take more open-air exercise.

Hopeful.—We are not sure that we understand you. Where does the fluid collect? There should, in health, be no such symptom, and you must be more explicit in your description of your case. If there is any swelling or enlargement, you must see a surgeon.

Wandering J.—We fancy you would find the services of a hairdresser or some one of similar occupation suitable. An advertisement in one of the daily papers, stating you require slight services of the kind occasionally, would be your best plan.

Claudius.—Take plenty of exercise, sufficient to weary you out; live moderately; avoid fluids late at night; sleep on a hard mattress, and, above all, exercise mental control. No medicines are required, only common-sense and open-air exercise.

An Anxious Mother.—You evidently did not state the case fully in your first letter, as your second contains details we have not heard of before. Please restate the case fully in all its details, and we will endeavour to give you an opinion. When did the examination (of which you did not speak before) take place, and why?

Eye.—In such a case as yours we are of opinion that you require constitutional rather than local treatment. We should advise you to see a physician who will prescribe for you. Glad (if desired) to send you the address of an Edinburgh physician who will satisfy your requirements. Don't trifle with your eyes.

A Sufferer.—Lemon-juice will do you no harm. Your safety is to guard against cold and chill, to wear plenty of flannel, and to lie between blankets. You should drink potass-water when the symptoms appear. For the rest, strict attention to digestion and to the general health at large are the main points. When the joints are painful you should soak flannels in a mixture of half-an-ounce of carbonate of soda and six drachms of liquor of opium added to nine ounces of hot water. The flannels are then to be applied to the joints and gutta-percha placed over all, so as to make a kind of local vapour-bath for the painful parts.

J. B. L.—Try "Alkaram," which (like the mixture you have been using) is a safe remedy. You might also sniff the vapour of sulphur*ous* (not sulphur*ic*) acid, kept in a stoppered bottle. But in cases like yours we have invariably seen great benefit derived from a change to the seaside for a time, and by taking a little cod-liver oil emulsion.

D. S. W.—See advice to "J. B. L." above. Yours is a case in which a sea change would be beneficial. The symptoms you suffer from are merely indicative of a low state of health. Try the tonic recommended to "Ajax" in No. 44 Health.

J. W. S.—A symptom possibly of a little lowness of the system and feeble circulation. Try the effect of a little cod-liver oil cream (to be had from Mr. Thomson, chemist, Dublin-street, Edinburgh) taken through the cold weather. If your general health is braced up, your annoyance will probably cease.

Scotsman.—Rest after food, above all things else. Try a charcoal biscuit or two and the following powder:—Subnitrate of bismuth, five grains; compound tragacanth powder, half a scruple; one such powder to be taken twice daily for a short time.

J. A. R.—We should recommend you first to see a good physician or surgeon, and to follow his advice implicitly. In such a case as yours, we should fancy dilatation might be tried; but if this does not suffice, the operation to which you allude is a simple one, and performed daily. Don't think as you do of hospitals. We shall be glad (if you care for it) to put you in the way of obtaining an opinion. The methods to which you allude, as advertised, are quackery or related thereto.

Judex.—Use injections of "Condy's Fluid" and water (1 part to 10 or 15); avoid constipation and all stimulants; attend to cleanliness; and, above all, rest for a week or more.

Homo.—The person whose pamphlet you send us, lives and trades on the fears of the ignorant and youthful. See advice to "Claudius" above. Seek cheerful company, and don't grow morbid.

[*Continued on page* 320.

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Gipsy.—If you send a stamped, addressed envelope, we can give you the address of such a specialist in skin diseases as you wish to see.

Nil Desperandum.—These pains are of no great account. When they are severe, rest may be enjoined, attention to the general health, and plenty of nourishing food. All young persons are liable to suffer from them more or less. They pass away quickly, and are only an indication of a slight temporary excess of growth over nutrition.

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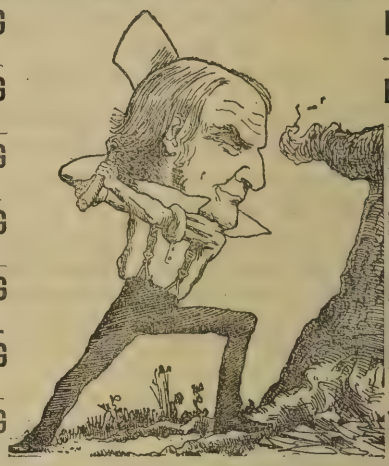

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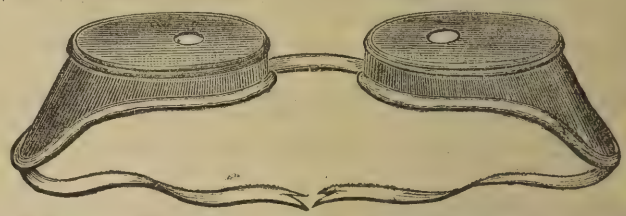

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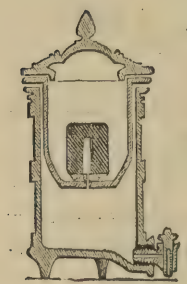

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• HEALTH •

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 22, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE "tinned meat" question again seems destined to come to the front. We read of two boys who were said to have died in Glasgow through eating "tinned mutton;" and it is stated that no fewer than eleven persons in addition were affected by an illness of similar origin. Now, the phrase "tinned meat" is a very wide and indefinite one; and it is just as well that people should know that any meat put up in tins is liable to become noxious if allowed to remain exposed to the air, and if eaten after decomposition has set in. Tinned meats are not meant to be kept for any length of time after being opened. The food which, when newly opened, may be, and as a rule is, perfectly wholesome, is liable to acquire poisonous properties if allowed to remain exposed to the germ-laden air. There is also the further risk of certain noxious chemical actions taking place between the tin and the meat itself. It would, perhaps, be more satisfactory did the manufacturers of tinned meats announce the above facts plainly on the labels of the tins. Such a practice would tell as much in the interest of vendors as in that of purchasers.

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ALL animal substances appear liable to produce, as the result of decomposition and decay, certain chemical substances known as "cadaveric alkaloids." These were referred to in an early number of HEALTH. Suffice it again to say that we know comparatively little as yet of the true nature, origin, and effects of such bodies. What is more to the point is the advice that whenever any food of animal nature—meat, cheese, shellfish, &c.—is suspected of having been poisonous, a smart "emetic" (or vomit) of mustard and hot water should be at once administered, and if the patient shows signs of collapse stimulants, in the shape of brandy, ammonia, &c., should be given.

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THE cat appears of late to have acquired an unenviable notoriety in respect of the production of hydrophobia. At least two cases have been reported, within as many weeks, of children, who, after having been bitten by rabid cats, succumbed to the dread disease. The cat, of course, is well known to be liable, like the dog, to attacks of *rabies;* but, as in the case of the dog, it is only the bite of a "rabid" (*i.e.*, diseased) cat, which can produce hydrophobia in man. An ordinary cat or dog bite, properly sucked, washed, and allowed to bleed freely for a time, need cause no one any alarm.

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MR. CHISHOLM'S papers on "Schools and Examinations," now appearing in our pages, direct attention to what may be called the "great cram evil" of modern educational systems. Mr. Johnson Martin, Medical Officer of Health to the Bolton Rural District," has discussed in a recent paper the injuries to health arising from "cram" and its prevalence. He gives cases of undoubted strain in children, and shows how terribly lasting are the effects of such tasks and hours on youthful minds and bodies. A father told Mr. Martin that his little girl was to be found "at her lessons as soon as she gets out of bed, then at school, and when she comes home at night," continued the parent, "she has so many lessons to learn that she cannot eat and is now growing as thin as a lath." We trust the father in this case did not require any medical advice to enable him at once to apply the only remedies of service in the case—rest, play, fresh air, and a long holiday. Another little girl broke down under the accumulation of tasks, talked about her lessons in her sleep, and so on. It is clear that unless parents (who really make the laws) will take the matter of "cram" into their own hands, the days of the "innocents" are doomed. We are trying to make our children "wise as serpents," and a sorry mess we are making of their health and life in the endeavour!

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DR. ANDERSON, the Dundee Medical Officer of Health, has just published an interesting address on the duration of life in that thriving town. One set of statistics he quotes is worthy remembrance by the enterprising spirits who desire to see the banks of the Tay tenanted by long-livers and healthy persons. Dividing the population of Dundee into four classes, Dr. Anderson adduces statistics to show the mortality prevalent in each class. The first class includes the gentry, professional men, merchants, and employers of labour; and [with the mean age (at death) of *all* who died above twenty years of age at 52·34 years] the mean age at death in this first class was 64·54. Class second includes tradesmen, shopkeepers, salaried persons, and here the mean age at death as above indicated was 51·37. In class three, represented by mill-workers, factory hands, foundry-workers, and those in docks and shipyards, the mean age at death was 49·68. In class four (including all other wage-earning persons) the mean death-age was 53·61. That there is great room for improvement in the means of healthy living in Dundee, as in every other town indeed, is clearly borne out by the above statistics.

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WE hear of an interesting philanthropic experiment which is about to be instituted at Bournemouth by Lord Henry Somerset, in the shape of a home for young men suffering from consumption. The beds are to be largely free; and the benefits of such an institution to shop-assistants, clerks, and others whose means do not admit of their paying a visit to a health-resort, must be incalculably great. Paying patients, we understand, will also be ad-

DAYLIGHT IN PASSAGES.—CHAPPUIS' Reflectors, 69, Fleet-street.—[ADVT.]

mitted; and it would be satisfactory to learn that a "side" for female patients was likewise included in the founder's intent.

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When we hear of vast sums of money being subscribed for the erection of statues to statesmen, more or less distinguished, or for "missions" to Jews and Pagans, we may well be tempted to reflect upon the nobility with which such a work at home as that above-noted becomes invested, when compared with the multifarious schemes and often absurd ways of spending money abroad which are in daily practice. Few persons realise how eagerly the chances of health are clung to by the poor, or how bitterly the inability to procure health-conditions for want of means is felt by many who are ashamed to ask charity or pecuniary aid. Many a bread-winner, who might have been saved from the toils of consumption by a change for a few months to a genial resort, is forced, through "lack of gold," to perish at home, and to leave a widow and children to face the world, helpless and alone. The rich and well-to-do should bethink themselves of schemes like that of Lord Henry Somerset, as presenting not only opportunity for doing good of the highest kind to individuals, but of benefiting through the sufferers they relieve, hundreds of others who may be dependent on the sick ones. There are too many schemes of grandiloquent nature afoot after all. True charity and religion consist more typically in relieving the helpless sick than in supporting hydra-headed "foreign missions," or in attempting to proselytise Jews.

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In common with many of our readers we are waiting with patience to hear more about Dr. Moffatt's "Italian air" theory of voice-improvement. A Mr. White, of Plymouth, writing in the *Lancet*, remarks, that while English pupils studying in Italy do not experience the remarkable effects claimed for Italian air, Italian vocalists in England contrariwise do not lose their own special brilliance of tone. This looks like a sensible criticism, and suggests that, after all, race-peculiarity, and not peroxide of hydrogen, lies at the root of the Italian purity of song.

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"An American Assembly-man," says the *Pall Mall Gazette*, "who holds that, besides the three R's, instruction in physiology and hygiene should be given in the public schools of America, has drafted a Bill for that purpose. In his opinion, it is necessary that some knowledge of the human body and of the conditions under which that body can live in a healthy state should be imparted to a child. And not only should this be taught, but it should be taught with especial reference to the effect of narcotic and alcoholic poisons on the human system. His Bill requires that teachers applying for positions in the public schools shall be examined with reference to their knowledge of physiology and hygiene. But it is easier to make a Bill than to pass it, as our Assembly-man has experienced, for all his earnest endeavours have not yet proved successful." Yet that "American Assembly-man," in our humble opinion, is on the right track for healthy, intelligent civilisation.

The Banner System of Sanitation has recently been applied to the Board Room of the Paddington Vestry Hall, Harrow Road, W. Messrs. Banner have been requested to inspect and report upon the ventilating arrangements at Lloyd's Underwriting Rooms, London.

Original Essays

"Life is not to live, but to be well."—*Martial.*

EXAMINATIONS, SCHOOLS, AND HEALTH.

By Geo. G. Chisholm, M.A., B.Sc.

SECOND PAPER.

I promised in the present paper to adduce some evidence of the injurious effect on health of excessive examination. To furnish this evidence is unfortunately too easy. I may begin with the evidence of a general nature borne by medical authorities. Numerous medical men give their support to the *Lancet* in saying "there can be no room to question the extreme peril of overwork to young children and youth with undeveloped brains." And with reference to what actually happens in our schools, Dr. Hack Tuke, who cannot be looked upon as a fanatical opponent of the examination system, reminding us, as he does, that "it is possible to exaggerate, as well as to underrate, the mischief done by excessive mental work . . . . to the unjust detriment of the educator and examiner," yet declares that "the present abuse of the system ought to be protested against by all who desire that the future men and women of Britain shall be in possession of 'healthy minds in healthy bodies.'"

Much detailed evidence on this subject is furnished in an excellent article by Mr. R. A. Armstrong, originally published in the *Modern Review*, and afterwards separately under the title of "The Over-strain in Education." Not only that pamphlet, but various other testimony shows that in the case of pupil-teachers employed in Board Schools, and required to teach younger pupils, and to prepare themselves for a variety of examinations, the strain is especially severe. We find, in consequence, numerous complaints as to the miserable physique of pupil-teachers.

To this fact Mr. T. Pridgin Teale, President of the Health Department at the last meeting of the Social Science Congress, drew special attention in his Presidential address. Speaking as a medical man, as a professional teacher, as a University examiner, and as a member of the Medical Council, with reference to the tendency of modern education to influence health and physical growth, he said that his own observations, chiefly made upon pupil-teachers, had been such as to render him "horrified at the refinement of human slavery and torture that had been invented." "The nation," he added, "can hardly realise what is the life of these pupil-teachers."

An inspector of schools gives evidence of a like kind. He states that while the head-teachers are compelled to get more and more out of the pupil-teachers to meet the increasing demands upon the school-children, their own examinations are getting harder and harder, and many of them, in consequence—girls especially—show unmistakable signs of overwork.

As regards both teachers and pupils in our Board Schools, the principle of "payment by results" is responsible for much injury to the health. We are indebted for this means of ensuring and gauging educational progress to Mr. Robert Lowe, now Lord Sherbrooke, who, several years after it was practically applied in our educational system, defended it by an aphorism well fitted to appeal to a nation so thoroughly grounded in the axioms of political economy as this is. "Once place," he says, "a man's ear within the ring of pounds, shillings, and pence, and his conduct can be counted on with the greatest nicety" (*Nineteenth Century*, 1878, p. 864).

I don't know exactly what the nature of the conduct counted on by Mr. Lowe was, but let us see what the conduct that ensues from the application of the principle so stoutly defended by him actually is.

It is necessary, however, first to explain the mode in which the principle is applied. The principle of "payment by results" in Board Schools means that the Government grant on account of any school, and consequently, as a rule, the amount of the teacher's salary, depends to some extent upon the number of children whom the teacher can get to pass the inspector's examination in the different standards. Directly or indirectly it is the pecuniary interest of the teacher to pass as high a proportion of his scholars as he can. His ear is brought directly "within the ring of pounds, shillings, and pence," and the conduct that sometimes results is like the following:—

"In Nottingham not long since the parents of a little girl, seeing her overdone and talking of lessons in her sleep, gave notice that they should keep her from school for a time. The teacher promptly called, and offered a present if the child attended regularly. A mistress in Yorkshire was called before a Committee of her Board a few weeks since for unmercifully beating a girl eight years old on the head, because she failed to work a problem in arithmetic (Standard III.). When the mother complained, the answer was that the child was clever enough, and could do the sum if she chose. The parents pleaded that she was delicate, and that they would much rather she did not pass the examination till next year, if any severity had to be used. To which answered the teacher, 'But I *want my money*, and I'll *make* her pass.'" ("Overstrain in Education," pp. 15-16.)

Such is the conduct that *may* ensue from the system of payment by results as now applied in education, but I will not be so unjust to human nature as to assert that that is the conduct that "can be counted on with the greatest nicety." Yet it is not reassuring to find from the reports of inspectors of schools how often the spirit that leads to conduct of the kind just illustrated is manifested by teachers in the management of their pupils. The evidence of inspectors of schools is important on this point, not only because they have better opportunities than almost any others of knowing the facts, but also because they are not, as a rule, prejudiced against a system, the working of which it is their business to superintend. Numerous extracts might be made from these reports in support of what has been stated; but there is only space for one or two.

The evidence of Mr. Synge, the inspector of the Norwich district, is very striking. "It must," he writes in his report for 1881—"it must have struck every one connected with elementary education that it is being conducted at present at the cost of a very great strain to all those concerned in it. . . . . Some few [teachers] are contented still to do their work well, day by day, without unduly troubling themselves about it; but there are more among the working section of teachers, who are troubled by the children who, from one cause or another, are not able to keep up with their fellows, and by the knowledge that the percentage of passes is likely to be less than that of some neighbouring school; and so the children are kept in from their play day after day, pupil-teachers have to work during a day of more than the appointed length, and while it is very doubtful whether more work is done, much disquiet and wrong are caused."

Another Inspector, Mr. Fisher, writes thus:—"A point to be noticed and condemned is a growing practice of keeping children in after the regular hours of instruction, in order to secure what are called higher results in the examination. . . . . Managers as a rule attach too much importance to the percentage of passes obtained in the annual examination, without sufficient regard for the quality of the work. The result is that teachers will strain strength to the utmost to convert a possible 90 per cent. of passes into 92. . . . . It is no teacher's duty to risk health and strength over children who can only acquire the minimum of knowledge at such a cost."

True enough, it is no teacher's duty, but it is a sample of the conduct that "can be counted on with the greatest nicety" when the teacher's ear is brought "within the ring of pounds, shillings, and pence."

The effect on the children is only what might be expected. "Dozens of instances," says Mr. Quayle, of Liverpool, headmaster of St. Thomas's and St. Matthew's, "of complaints from parents concerning their children's loss of appetite, talking in sleep, languor, nervous state, indifference to childish sports, &c. No robustness or energy." . . . . "The children would be better," writes a mistress, "both in mind and body, if their school-life was happier. The strain of the code prevents this." "The children's health is placed, unfortunately," writes a master, "in competition with the schoolmaster's means of living" ("Overstrain in Education," p. 15).

FIVE TERRIBLE YEARS.

By James Clough.

PART TWO.

A few weeks at most served to carry the plague into Egypt, into the two Sicilies, and to Marseilles, and, in fact, to all places having direct communication with Constantinople. From these places the whole of Europe was attacked.

In 1348 the disease had appeared in all the islands of the Mediterranean, also in Northern Italy, France, Spain, and Germany.

So severely did Italy suffer that whole villages and towns perished to a man, and many families became extinct. Indeed, it is said that half of the population was swept away. Venice lost a hundred thousand souls, and the rest fled in ships; Sienna lost seventy thousand; and in Sardinia and Corsica two died out of every three. Florence lost sixty thousand, who were stowed away in great holes, like goods in a warehouse, and so great was the terror, that it was forbidden either to ring the death-knell or to publish the numbers of the deceased. Boccaccio has left us a graphic account of the visit of the plague to this city, and has made this the *motif* on which to hang the plot of his "Decameron."

From Italy the plague passed over the Alps and met the wave which had already entered by Marseilles. In France, says the continuer of the chronicle of Nangis, in many parts, of twenty persons only two remained alive. At the

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Hôtel Dieu, in Paris, five hundred died a day, and were carried in carts to the Cemetery of the Innocents. In Paris, eighty thousand perished, as well noble as simple, and among the victims are mentioned the Queen of Navarre, daughter of Louis X., and wife of Philippe of Valois, and also a bishop. At Avignon, the Pope consecrated the Rhone, so that the dead might be cast into its waves, for the mortality reaching up to sixty thousand, all the churchyards were full. At Marseilles sixteen thousand died in a month, and some of them so suddenly that they seemed to have been struck down dead. Throughout the country the people in their blind terror accused the Jews of having poisoned the wells, so ignorant were they of even the probable origin of the distemper; and, of course, the persecuted race were butchered without mercy. The Government were as ignorant of sanitation as the mob, and Philippe of Valois issued some edicts which seemed rather calculated to incite than to allay the popular fury, for he commanded all blasphemers to be punished for the first offence by the loss of one lip, by the loss of the other for the second offence, and by the excision of the tongue for the third.

Germany was less severely visited, and yet a million and a quarter were carried away. Austria, however, suffered severely, for at Vienna twelve hundred died daily. Many houses became desolate, it was forbidden to bury in the city, and six great pits were accordingly dug outside, into which corpses were thrown by the thousand. Other towns were in similar doleful plight, for at Erfurt sixteen thousand perished, at Strasburg sixteen thousand, at Weimar five thousand, at Lübeck nine thousand, and at Basle fourteen thousand.

The sea offered no protection against the contagion, for if one infected person were on board the ship every soul perished, and many a vessel floated about the English Channel and North Sea like some "Flying Dutchman," with nothing but corpses on board; and the infection spread wherever the vessel was wrecked. In this way the plague reached the British Islands and the Scandinavian north.

It was thus that the Black Death broke out on the coast of Dorsetshire in the year 1349. A few days afterwards it had reached Devonshire, and shortly afterwards the whole kingdom was groaning under the infliction. In London so many died—at one time it reached as many as two hundred a day—that all the existing churchyards were filled, so that other burying-places became necessary, pits, fields, and other unconsecrated places being freely used. Ralph Stratford, Bishop of London, bought three acres of land known as No Man's Land, and, having consecrated them, built a chapel and consecrated a graveyard, long afterwards called Pardon Churchyard. This not proving sufficient, Sir Walter Manny, whose name figures so well in the French wars of King Edward, bought the Spital Croft of thirteen acres next adjoining, and built thereon a chapel known as New Church Haw. The site of these two plots of about sixteen acres is now Charterhouse-square and its neighbourhood; New Church Haw having, by further endowments from Sir Walter Manny, developed into the Carthusian Priory, now more celebrated as Charterhouse School. About fifty thousand corpses were deposited in these two plots; but at least double that number perished in London. So great, indeed, was the mortality that the courts of justice were closed. In Bristol so many were carried away that the city was like a dead place, and grass grew several inches high over Broad-street and High-street. Two thousand died at Leicester, and so on all over the kingdom. It is said that at least one-third of the population perished. Strafford, Archbishop of Canterbury, having died in 1348, the King nominated John de Ufford as his successor, but he died of the prevailing epidemic in 1349, before consecration, as did also his successor, Bradwardine. So great was the mortality among the clergy, that they were forced to admit young men, almost boys, to become rectors; and a Bull of Pope Clement authorised the Bishop of Norwich to admit sixty clerks, though only twenty-one years of age, to hold livings, as about a thousand churches in that diocese were void of incumbents. Indeed, England suffered with such peculiar severity that people became suddenly pious, and so indifferent to worldly matters that commercial rates were ridiculously low. At the same time there also prevailed a murrain among the sheep which "putrefied them in such a manner that neither birds nor beasts would touch them." In most countries the plague stalked through with rapid strides, but here it lingered—a terrible condemnation of our ignorance of sanitary affairs in those days—as if it loved us. The harvest, a good one, and much needed, rotted on the ground for want of labourers; and, of course, a famine followed. Indeed, some writers go so far as to say that, with one disaster or another, nine out of every ten perished, but this is probably only true for a few isolated districts.

Ireland and Scotland, whither the plague was carried by refugees, suffered severely enough, it is true, but comparatively much less than England. Scandinavia, Iceland, and Greenland were attacked in the later portion of the year 1349, principally through the wreck on their coasts of infected vessels.

A Valuable Invention.—It is gratifying to learn that Mr. R. Adams, of 17, Blackman-street, London, S.E., whose fanlight-openers and silent door-springs are being extensively used, has received large orders for his Patent Reversible Window. The sashes, although they slide up and down in the usual way, can be instantly turned inside out, enabling anyone to clean each side of the glass with ease, while standing in the room.—[Advt.]

Dynamite Pills.—A singular instance of cure by mental excitement produced through the agency of "dynamite pills," in the case of a hysterical woman, 26 years of age, suffering from spasmodic contractions with paralysis of the lower limbs, which had affected her over two years, is reported by Messrs. Landousky & Ballet. She was directed to divide two pills, described as "fulminating pills," into four halves, one for each dose, and that she was to observe the greatest care in taking them. On the following day she stated that she had tried to poison herself by taking the whole of the pills at once; that they had had a terrible effect upon her, but that her complaint was completely cured. The pills were composed of bread-crumbs only.

Metallised Wood.—Hard woods after passing through the following treatment, called Rubennick process, when dry, are susceptible of a high polish by burnishing, and even a metallic lustre, the brilliancy of which is enhanced if the surface has been rubbed previously with lead, tin, or zinc plates, and then burnished with a glass or agate burnisher. The timber is first immersed in a bath of caustic alkaline lye, in which it is allowed to soak for two or three days, according to the degree of porosity of the wood, at a temperature of 167 deg. to 194 deg. F. From this bath the wood is shifted to another of hyposulphate of calcium, to which is added, after twenty-four or thirty-six hours, a concentrated solution of sulphur. Here it remains for about forty-eight hours at a temperature of 95 deg. to 122 deg. F., and lastly immersed in a solution of acetate of lead for thirty to fifty hours at the same temperature.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

WHY WE EAT OUR DINNER.

By Dr. Andrew Wilson.

(From an article in *Belgravia* for February, entitled "An Invitation to Dinner."

One now begins to gain a glimpse of the fashion in which life-science answers the question, Why do we eat our dinner? When we begin to conceive that the human body is, in one sense, a mere machine, which performs elaborate and complex chemical and physical work, and which, moreover, is always in action, more or less completely, we are able to understand the basis on which physiology rests its final reply concerning the philosophy involved in Smith's invitation to dinner. But to render the position of the scientist still more evident, we may inquire a little more exactly into some of the details of bodily work—including under this latter term the mental side of matters equally with the physical aspects of life. And firstly, What, one may ask, are the proofs that this wear and tear of body represent an actual fact of existence? The candle, which disappears as it burns, only changes the form of the materials of which it consists. Chemically treated, weight for weight of waste products (gas, water, &c.), into which the candle has been resolved, could be produced, as evidence that the matter of the taper has merely undergone a change of form after all.

There is no period of day or night during which cessation from work is possible to the body. If we suppose that the Professor in the scales consented to trouble himself neither about to-day nor concerning to morrow, and to allow his muscles as well as his cerebral organ to remain as thoroughly passive as might be, he would still remind us of breakfast, lunch, and dinner; and, apart from habit altogether, would feel perfectly ready and willing to join us at table when the "joyful sound" of gong or bell reached his ears. Nor would he be at any loss to reply to the obvious remark that, as he had done no work, he could have no reasonable expectation of participation in the delights of the table. He would require us to note, firstly, that he had been working, even while resting; secondly, that his work was unavoidable; and thirdly, that from its serious nature it necessitated speedy repair. The heart can be shown to perform in each twenty-four hours of its existence an amount of work which can be legitimately termed of prodigious extent. Calculations of very exact nature have been made regarding the work done by the central organ of the circulation. The heart is a hollow muscle; hollow, to allow blood to pass through its chambers, and a muscle, that it may contract to expel the blood forth into the vessels. The heart's work is, therefore, as purely muscular work as is the lifting of weights or the movements of walking. Now, the "unit of work," as the basis of calculating the amount of labour expended in any given action, is an expression which, plainly stated, may be taken to mean that amount of energy (or "power of doing work") required to raise a unit of weight (1 lb.) through a unit of height (1 foot).

The heart is composed of four compartments or chambers. Two are "auricles," which receive blood from body and lungs respectively, and which propel the blood each into the larger chamber (or "ventricle") with which the auricle of each side is in free communication. If the weight of the blood which is expelled by the sharp contraction of each ventricle is multiplied by the height to which the blood rises in a tube placed in communication with the outlet of the ventricle, we obtain in the result the work done by each of these larger chambers of the heart. It has been found that the height to which the blood is sent in the tube is about nine feet. The weight of the blood expelled at each contraction of the left ventricle of the heart is about four ounces. The multiplication of these numbers, therefore, gives us $2\frac{1}{4}$ foot-pounds—that is, a force capable of raising that number of pounds one foot high—as the work performed at each contraction of the left ventricle. The right ventricle's work measures only one-third that of the left; the right side of the heart being less powerful than the left, and being occupied with driving blood simply to the lungs, whilst the left side propels blood through the entire system. The addition of the work of right and left sides, therefore, gives us three "foot-pounds" as the total work of the heart at each beat or contraction. But in an adult person there are performed at some seventy-five or seventy-six such contractions per minute. At this rate, in twenty-four hours the heart must perform a startling amount of work. If we could gather all the force expended by the human heart in twenty-four hours into one huge lift, it would suffice to raise at least 120 tons weight one foot high. After such a revelation, it would be easy for us to accept hunger and thirst as the perfectly rational symptoms of a lazy man. With the fact at hand of a bodily pumping-engine constantly at work within his frame, he would require no further proof of his right to replenish the wear and tear of his body by regular attendance at meals. The idle man must needs eat and drink—for common idleness has, at least, a physiological justification at its back in the shape of the aphorism that whatever the hands find to do, the bodily organisation knows no rest or cessation from its labour and its toil.

It can be shown that the work of the heart is not the only labour which the ordinary processes of life entail. The function of breathing is practically as incessant in its operation as that of the heart. The rise and fall of the chest include, and are effected through, the work of a multiplicity of structures, such as ribs, chest-muscles, midriff, and lungs. When we read that there pass in twenty-four hours through the lungs of an adult at rest some 686,000 cubic inches of air—a quantity increased in the same period to 1,568,390 cubic inches in the hard-working subject—we may judge that the work and labour of breathing may fitly enough be ranked with that of the heart in respect of its magnitude. There exists a large amount of natural resistance offered by the elastic nature of the lungs and chest, and which has to be overcome by the muscles employed in breathing. It has been shown that the force which has to be overcome by these muscles in the act of breathing in 200 cubic inches of air exceeds 450 pounds. In ordinary breathing, the elastic force we require to overcome equals at least 170 pounds. With these details at hand, there is little need to further emphasise the fact that the stillest of lives is in reality a long spell of continuous work. In twenty-four hours the muscles of breathing alone perform an amount of work equal to the work of raising 21 tons one foot

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

high. Adding this amount to the force exerted by the heart, we may understand that even the quiet moments of our lives are attended by and carried on through work of a very severe character; and this even when the almost endless work of the brain in thought, and of the nerve-centres in controlling the bodily actions, is entirely set aside and overlooked in our calculation.

Returning for a moment to the subject whom we left in the scales, we may be required to specify the exact form in which the bodily substance of the subject experimented upon has disappeared in the acts and processes of life. Briefly stated, so much of our material substance is given off from skin and lungs, for example, in the form of water, part is excreted in the shape of carbonic acid gas, which thus becomes available as food for green plants; and part of the wear and tear is likewise given off in the form of heat, a curious substance called urea, ammonia, and mineral matters. In other words, our bodies, as the result of the work they perform, are perpetually being dissipated into so much heat, water, carbonic acid gas, and other substances. The animal frame is constantly breaking down into these inorganic matters, and is thus at once finding a lower level of existence and supplying the plant world with the matters from which the life of the vegetable kingdom will evolve new growths and fresh generations. Well might Erasmus Darwin write—

> Hence, when a monarch or a mushroom dies,
> Awhile extinct the organic matter lies,
> But as a few short hours or years revolve,
> Alchemic power the changing forms dissolve;
> Emerging matter from the grave returns,
> Fills new desires, with new sensation burns.

If it is true that "in the midst of life we are in death," it is no less true that from the physiological charnel-house into which living beings are perpetually doomed to pass, new forms take their origin. These are fed by the matter which, having done duty in living bodies, is, after a period of so-called decay, woven anew into the textures of succeeding generations of animals and plants.

How Drugs Affect the Secretion of Milk in Animals.—Action of various drugs on milk secretion has been investigated by Professor Stumpf, a German physiologist, by a set of observations made on goats. The following are the more noteworthy results that have been obtained:—*Iodide of Potassium.*—When this salt was administered, the yield of milk was reduced, while the percentage of fat and sugar in the milk was raised; salts and albuminoids were unaltered; the reaction of the milk became alkaline. *Acetate of Lead.*—Small doses of acetate of lead produced no change of composition nor of the yield. *Morphine.*—The same results were obtained as with acetate of lead. *Pilocarpine.*—This substance at first only reduced the quantity of sugar present in the sample of milk. *Salicylate of Soda.*—This salt occasioned a considerable rise in the yield of goats' milk, but we are not told whether it was continuous. *Alcohol* did not alter the yield, but the amount of solids in the milk increased. *Beer.*—When beer was given to the goats, the specific gravity of the milk fell, and there was more fat and sugar in the product. The only result of much interest is that which the author has obtained with *salicylate of soda.* He says that "Sodium salicylate considerably raised the yield." This is a subject worth looking into, the more so as Mr. Stumpf does not appear to have repeated the experiment, nor to have ascertained in what manner the salicylate of soda acted upon the system to produce this result.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

A WORD FOR THE BABIES.

"The child is father of the man," says Wordsworth, and a greater than Wordsworth, probably with the same thought in his mind, said, "Train up a child in the way he should go, and when he is old he will not depart from it." If this be true regarding the mental and moral life, no less true is it with respect to the physical existence. No one could expect a half-starved, wholly neglected infant,—kept in life, as it would seem, merely by that mysterious special Providence which we are wont to say "looks after bairns,"—to grow by-and-by into a strong and healthy man or woman, delighting the eye with a perfect physical beauty of form and feature; while, on the other hand, it is a well-known fact that even very delicate children may by careful training and nursing grow up into vigorous and useful members of society. It is our opinion that there is a vast amount of unknown and unnecessary pain and weakness in the world, and many infirmities which are quietly borne in ignorance by men and women who simply do not know what perfect health means, and are therefore not surprised, only patiently submissive, when they suffer day after day from lassitude, headaches, weak backs, and unutterable weariness. That such people have their early training to thank for this sad state of things there can be little doubt; and therefore it would not be amiss if those who have the charge of children were to give a little intelligent attention to the few particulars which we intend to bring before the reader's notice. We know that

> Evil is wrought
> By want of thought
> As well as want of heart.

And, although there is not, let us hope, one woman in a thousand who would willingly cause suffering to a little tender child, there are many, we fear, who in various ways err through ignorance.

The first thing we wish to call attention to is the fact that very young babies should not be encouraged to "sit up." When we consider what a weak, helpless body a new-born infant has, with nothing in the way of muscles, and not much as regards a reliable back-bone, we cannot but wonder at the delight with which many young mothers and nurses regard the poor little wobbling bundle in their arms, when they exclaim, "How early he has begun to sit up and take notice!" Let the infant "take notice" as much as he likes by all means, but insist that he should do so *lying on his back.*

A child who has never been taught to sit up, has naturally no other notion of existence than a recumbent position, and will remain good and quiet for hours together, lying so in his cradle or on soft pillows, while the poor little being who has been tossed up and laid down from the time he was three weeks old, will undoubtedly tease his nurse by dissatisfied wailing, if expected to do the same for ten minutes.

In the new sanitary mode of dressing infants, which at present is much recommended by medical men, the old tight flannel *binder* is almost altogether discarded. And why? Because no infant requires artificial support while

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

he is on his back, and by the time he is four months old, which is the earliest age at which he should be allowed to sit up, his back has gained sufficient strength to enable him to do so without danger. Of course, care must be taken even then that he does not overdo it, but the liability to do so is obviously lessened. There is little doubt that an infant thus carefully watched, runs a better chance of possessing a strong, straight, well-developed frame, than those who are allowed too early in life to strain their poor little backs.

The idea of strength is closely connected in most minds with that of beauty, and, from considering how to make our children strong, we pass easily to the endeavour to make them beautiful. We all know the fable of the sportsman and the snipe, the moral of which is that all mothers think their own children the most beautiful. Whether this is true in all cases we cannot be certain, but at least no one will blame a mother for endeavouring to make her little ones as beautiful as possible. And this is not to be done by decking them out in fine clothes, which check the freedom of their limbs, or wearying their lives by a minute attention to details in the matter of curling hair, tying sashes, and fitting their feet into tight boots—but by a careful and living supervision of all those trifles which make up the sum of a healthy, happy life. We could almost apologise for alluding to a fact so insignificant (except that we consider nothing which conduces to health and comfort unworthy of notice), but many nurses are very careless in dressing young children. Drying them carelessly, for instance, after a bath, and so causing rough places on their little bodies, which may become irritating, and even sore; tying strings so tight as to leave red marks on the tender skin; and often, too often, crumpling up their delicate ears when laying them down to sleep or tying their bonnets on. What can be more ugly than prominent or badly-shaped ears in man or woman, and yet how often they are caused by want of attention and careless haste?

Perambulators are in many cases necessary, but where it is possible a child is better carried in the arms than driven, as we too often see them, fast asleep, with their heavy little heads hanging over the side. Such a position, repeated day after day, is sufficient to cause curvature of the spine, the careless exposure of neck and arms may cause a chill, and the child cannot derive half as much benefit from being in the open air as when he is kept awake and bright enough to enjoy it. The best perambulators are those in which the child sits facing the nurse, with a hood at his back, which can be raised to protect him from the cold wind. A good nurse will see that her little charge sits straight, does not *loll* on one side; and will, by talking to him, keep him lively, and, by drawing his attention to different objects, will prevent his falling asleep or growing weary. She will probably find on their return that the child will eat his meal with better appetite, and sleep all the better when the proper time comes for being kept awake and intelligent during his airing.

We need hardly say that these remarks are not addressed to those who possess experienced nurses, who *ought* to think for themselves, but rather to the many mothers who are compelled by circumstances to leave the care of their children very much to young and inexperienced girls, who, however anxious they may be to perform their duties faithfully, have neither the sense nor the knowledge which would enable them to do so.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

How to make Smelling Salts.—Among the many formulæ for smelling salts, the following are much used, and will furnish a satisfactory article:—"Inexhaustible Smelling Salts" (so called) is thus prepared: Water of ammonia, 1 pint; oil of rosemary, 1 drachm; oil of lavender, 1 drachm; oil of bergamot, ½ drachm; oil of cloves, ½ drachm. Mix the whole together with agitation in a very strong and well-stoppered bottle. The mixture is used by filling the smelling-bottles with any porous absorbent material, such as asbestos, or, what is better, sponge cuttings that have been well beaten, washed, and dried. After the bottles are filled with the sponge, it is thoroughly saturated with the scented ammonia, but no more is poured in than the sponge will retain when the bottles are inverted; as, if by any chance the ammonia runs out, and is spilt over certain coloured fabrics, it causes a stain. For transparent coloured bottles, instead of sponge, the perfumers use what they call "insoluble crystal salts" (sulphate of potassium). The bottles being filled with crystals, are covered either with the liquid ammonia, scented as above, or with spirit of ammonia (alcohol saturated with ammoniacal gas). The necks of the bottles are filled with a piece of white cotton; otherwise, when inverted, from the non-absorbent quality of the crystals, the ammonia runs out, and causes complaints to be made. The crystals are prettier in coloured bottles than the sponge; but in plain bottles the sponge appears quite as handsome, and, as before observed, it holds the ammonia better than any other material. Perfumers sell also what is called "White Smelling Salts" and "Preston Salts." The White Smelling Salt is the "sesquicarbonate of ammonia" in powder, with which is mixed any perfuming oil that is thought fit—oil of lavender giving, as a general rule, the most satisfaction. The contents of a bottle so filled soon lose their pungency, and a nearly inodorous residue remains. This objection is partly removed by following Mr. Allchin's plan, the first step of which is to convert the "sesquicarbonate" into the "mono-carbonate of ammonia," which is accomplished in the following way:—Forty ounces of sesquicarbonate of ammonia are broken into fragments, about the size of filberts, and placed in a jar having a well-fitting lid. Into this is afterwards poured twenty ounces of stronger water of ammonia. This mixture is frequently stirred for a week, and the jar is then set aside in a cool place for three or four more weeks. If the mixture is not stirred for the first week, it sets as hard as a stone; after stirring, however, it becomes solid and dry, but can be easily removed from the jar. It is now reduced to a roughish powder, something like granular carbonate of potassium, and in that state it is ready for filling the bottles, and some volatile essence, or strong ammonia perfumed with essential oils is added. The volatile essence Mr. Allchin uses and recommends as follows:—English oil of lavender and tincture of musk, of each, 4 drachms; oil of bergamot, 2 drachms; oil of cloves, 1 drachm; oil of rose, 15 drops; oil of cinnamon, 5 drops; stronger water of ammonia, 1 pint.

How to make Eau de Brettfeld.—Digest 230 parts of Florentine orris-root with 2,000 pasts of Cologne spirit for three days in a warm place. On the other hand, dissolve

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

70 drops of oil of lemon, 60 drops of pure oil of rose, 70 drops of oil of neroli (bigarade) in 300 parts of Cologne spirit, and digest 0·15 parts of musk in the solution. Finally mix the two liquids and filter. The product has an agreeable violet-like odour. The residuary orris-root may be used for other purposes, such as "pot-pourri," &c.

How to make Eau de Cologne.—A very pleasant and refreshing Eau de Cologne, much resembling that sold with the trade-mark "Springbrunn," may be obtained as follows:—Dissolve 15 parts of oil of orange-peel, 15 of oil of lemon, and 6 of oil of bergamot in 3,000 parts of finest Cologne-spirit. (It is absolutely necessary that only the purest and finest oils and alcohol be used.) Also dissolve 1 part of oil of neroli (pétale) and 1·5 parts of oil of orange (petit grains) in 1,000 parts finest rectified rye spirit. After standing for five or ten days, both liquids are mixed. It is best to distil the mixture, since the odours are better blended thereby; but it may also be aged by allowing it to stand for a time. To the distillate are added 2 parts of the finest oil of rosemary, and the liquid then put up in small well-corked vials, which must be kept in a cool, shady place.

Some Springfield physicians are speculating upon the influence of the telephone upon the sense of hearing. They have found several cases wherein disease of the ear is said to have been aggravated by using it.

Neuralgia and Headaches in Girls.—Nothing is so terrible as severe neuralgia, and beyond a doubt girls acquire it often enough by the conditions of school life. Headaches in a school-girl usually mean exhausted nerve-power through over-work, over-excitement, over-anxiety, or bad air. Rest, a good laugh, or a country walk will usually cure it readily enough to begin with. But to become subject to headaches is a very serious matter, and all such nervous diseases have a nasty tendency to recur, to become periodic, to be set up by the same causes, to become an organic habit of the body. For any woman to become liable to severe neuralgia is a most terrible thing. It means that while it lasts life is not worth having. It paralyses the power to work, it deprives her of the power to enjoy anything, it tends towards irritability of temper, it tempts to the use of narcotics and stimulants.

Wood Pavements in Paris.—It has been a source of some surprise that Paris, which has long enjoyed an enviable reputation for its fine streets and excellent pavements, should have committed itself to wood pavements. After what seemed to be a satisfactory test, a contract has been entered into with "The Improved Wood Pavement Company" of England to pave some of the principal streets and boulevards, including the Champs Elysées. The price paid is 4·85 f. per square mètre, to be paid annually for eighteen years. The process employed, as described in *La Semaine des Constructeurs*, consists in first laying a bed of béton and Portland cement six inches thick, covered with a thin layer of the cement about half-an-inch thick. The béton consists of one part by measure of Portland cement and two parts of a mixture of pebbles and sand, in the proportion of two of the former to one of the latter. The cement is mixed with as little water as possible. On this foundation are placed the blocks of wood, which are of red spruce, nine inches long, six inches thick, and three inches wide. The joints, which are about a fourth of an inch wide, are filled at the lower part with bitumen, and then above is a thin paste of cement which is poured or brushed into the cracks. The blocks are brought from England cut to the proper size and creosoted on the surface.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE HEATING OF HOUSES.

FIRST PAPER.—STOVE-HEATING.

By Dr. A. W. Bell.

(From the *North American Review.*)

So much has been said recently about the germ origin of disease, that people generally are in danger of having their attention diverted from prevalent tangible causes of disease within easy control, while catching at shadows. First among the controllable causes of ill-health in temperate and cold climates is an excessively variable or foul indoor atmosphere, due to defects in the mode of warming houses. Exposure to a temperature much below that of animal heat for any considerable time always weakens vitality and increases the susceptibility to disease. Hence, the economy of heat is a primary element in the art of preserving health. Of the common means to this end—clothing, houses, and fire—the last only is the subject of this article, and with special reference to the relative merits, from the sanitary point of view, of stoves and furnaces as compared with steam. Simply to obtain the necessary degree of temperature would be an easy matter, but ventilation must be constantly kept in view, and this cannot be secured without some sacrifice of heat. Time was when the open fireplace was regarded as the *conditio sine quâ non* of health; but, as Rumford put it, "while the draughts chill one part of the body, the rest is roasted by the fire in the fireplace, and this cannot but be injurious to health."

A close stove, everybody knows, is simply a hollow cylinder, or box, made of metal, brick, or earthenware, which is heated by a fire within it, and gives out its heat to the air by contact, and to surrounding solid objects by radiation. In an economical point of view it excels all other means of warming. The heated air from a fire-place is available to the apartment for only about twelve per cent. of the total amount of heat produced, all the rest passes up the chimney. The close stove, on the contrary, utilises from eighty-five to ninety per cent. of the heat produced, and loses through the smoke-pipe only about as much as the open fire-place saves—ten to fifteen per cent. And herein lies the striking difference between the relative healthiness of the atmosphere heated by a close stove and an open fire-place. The amount of air which hourly passes through a close stove, heated with a brisk fire, is, on an average, equal to only about one-tenth of the capacity of the room warmed, and consequently such stove requires, if unaided, ten hours to effect a change of the atmosphere in every such apartment. Thus stagnant and heated, the air becomes filled with the impurities of respiration and cutaneous transpiration.

Moisture, too, is an important consideration. The atmosphere, whether within doors or without, can only contain a certain proportion of moisture to each cubit foot, and no more, according to temperature. At eighty degrees it is capable of containing five times as much as at thirty-two degrees. Hence, an atmosphere at thirty-two degrees, with its requisite supply of moisture, introduced into a confined space and heated up to eighty degrees, has its capacity for moisture so increased as to dry and wither everything with which it comes in contact; furniture cracks and warps, seams open in the moulding, wainscoting, and doors; plants die; ophthalmia, catarrh, and bronchitis are common family complaints, and con-

sumption is not infrequent. But this condition of house air is not peculiar to stove-heat. It is equally true of any overheated and confined atmosphere. The chief difference is, that warming the air by means of a close stove is more quickly accomplished and more easily kept up than by any other means. Sometimes, by the scorching of dust afloat in the atmosphere, an unpleasant odour is evolved which is erroneously supposed to be a special indication of impurity, caused by the burning air. It is an indication of excessive heat of the stove. But the air cannot be said to burn in any true sense of the word, for it continues to possess its due proportion of elementary constituents. Such is the close stove and its dangers, under the most unfavourable circumstances. The Dutch-stove is occasionally found in country railroad depôts and similar places, where the frequent opening of doors makes amends for its deficiencies. In Russia, and other northern countries of Europe, stoves are frequently built of brick covered with porcelain, with relatively small fire-chambers near the bottom, and with winding smoke-flues which traverse many times through the structure, until nearly the whole of the heat generated is expended in it. The smoke-pipe, now comparatively cool, enters a flue in the wall and carries off the smoke only, while the heated mass of brick continues to retain heat and warm the room long after all the fuel is burned—for from eight to ten hours. If the same quantity of fuel were burned in an open fire-grate or close stove the heat therefrom would be expended in an hour.

Stoves have been so improved in recent years, in the United States especially, and are obtainable at such moderate expense, that no excuse for the continued use of such as have been above described now exists. Indeed, so important and rapid have been the improvements in the construction of stoves in the United States within the last eight or ten years, that it is difficult to find a market for those of older date. In England, where the people continue to be wedded to open grates, and where most is said by scientific persons against the use of stoves, improvements have been exceedingly slow and complicated, and the practicability of maintaining a sufficient and equable temperature and a wholesome atmosphere in a room warmed by a stove, is far from being realised; still less the convenience of warming several rooms at the same time by the same means, hot-air furnaces scarcely being known.

The essentials for healthy stove-heat are a brick-lined fire-chamber, exhaust-flue for foul air, means for supplying moisture, and provision for fresh-air supply. A brick lining is requisite for the double purpose of preventing overheating, and for retaining heat in the stove. For the supply of moisture the means are simple and easy of control, but often inadequate. An efficient foul-air shaft may be fitted to the commonest of close stoves by simply enclosing the smoke-pipe in a jacket—that is, in a pipe of two or three inches greater diameter. This should be braced round the smoke-pipe, and left open at the end next the stove. At its entry into the chimney, or in its passage through the roof of a car, as the case may be, a perforated collar should separate it from the smoke-pipe. For stoves with a short horizontal smoke-pipe, passing through a fire-board, the latter should always be raised about three inches from the floor. A smoke-pipe thus jacketed, or fire-board so raised at the bottom, affords ample provision for the escape of foul air.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

The introduction of fresh air is a comparatively easy matter, when by no more special provision than by a strip of board under the window-sash, closely fitted. The lap of the sash at the middle admits the air with a direction to the ceiling, and, consequently, without draft on any one in the room.

The experiments of Pettenkoffer have shown that under the common conditions of the atmosphere a very considerable exchange of gases takes place through dry plastered walls, brick, and stone; and it is the common experience of sick persons that they are sensitive to drafts through walls when the wind blows, and that they frequently take cold by exposure to the windy side of the house.

(*To be continued.*)

SPONGE-CULTURE IN FLORIDA.

The United States national museum has lately received from Messrs. McKesson & Robbins, sponge-importers, of New York, an interesting contribution representing the first successful attempts at sponge-cultivation on the American coast. It consists of only four specimens, all of the finest or sheep's wool variety, which was raised from cuttings at Key West, Florida, by the agent of the above-named firm. The localities in which the sponges were planted were not the most favourable for sponge-development, and their growth was therefore less rapid and perfect than might otherwise have been the case. They were fastened to the bottom, in a depth of two feet and a half, by means of wires or sticks running through them, and allowed to remain down a period of about six months before they were taken up. Fully four months elapsed before they recovered from the injury done them in the cutting, which removes the outer "skin" along the edges of the section; and the actual growth exhibited was for about two months only. The original height of each of the cuttings was about two inches and a half. One was planted in a cove or bight where there was little or no current, and its increase in size was very slight. The other specimens were placed in tide-ways, and have grown to from four to six times their former bulk, which certainly promises well for the future of sponge-propagation. Two hundred and sixteen specimens in all were planted at the same date, and, at the last accounts, those which remained were doing finely.

The chief obstacle to the artificial cultivation of sponges at Key West arises from the fact that the sponge-fishermen infest every part of the region where sponges are likely to grow, and there is no legal protection for the would-be culturists against intruders. The enactment of judicious laws bearing upon this subject by the state of Florida, or the granting of special privileges conferring the right to occupy certain prescribed areas for sponge-propagation, would undoubtedly tend to increase the annual production of this important fishery, which has remained at a standstill for several years past, mainly because of the partial exhaustion of several of the most extensive sponging-areas.

Accompanying these artificial growths was a collection of over a hundred specimens of the various grades of Florida sponges of different sizes, each labelled with its supposed age, based upon estimates of the average rate of growth, by the sponge-collectors.

We have it upon the authority of the *Scientific American* that the immense crematory at Rome is in almost daily use. Cremation is becoming daily more popular and bids fair soon to dispose of more corpses in the Italian capital than old-fashioned burials.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

THIRD PAPER.

The "turnings" described in the last paper enable one to move in a graceful manner, and it is the preliminary exercise to acquiring command over the movements of the lower limbs and the balance of the body. There is yet another exercise, however, that should be gone through to enable the pupil to acquire perfect command, so as to be able to walk without effort, awkwardness, jolting, or jerking up and down, or swinging from side to side. This exercise is the "balance" or "goose" step.

Some one has said you can tell a man's disposition by his walk. Whether you can or not I leave an open question; but certain it is that nine-tenths of the persons you meet seldom walk correctly, much less gracefully. The business man, with his head and shoulders bent forward, plunges along, trotting out his legs like the piston-rod of an engine when getting up steam, so anxious is he to commence his business of the day. Get on the opposite side of the street and watch this man: his body is carried forward by two limbs that swing backward and forward as if they were part and parcel of a machine. His is not an easy walk; it gets him over the ground in quicker time than a long, steady swing of the legs would; but at the same time it does him harm, for his mental anxiety not to lose a moment causes his limbs to keep pace with his mind, with the consequence that he is all in a turmoil and perturbed state on reaching his destination. Again, observe the walk of a butler, or indoor man-servant; being always on the go, up and down stairs, and ever ready to be obsequiously at hand when wanted, these servants acquire a short, quick, bustling, fussy kind of step, that makes them appear to be ever busy. When they go into the street, they walk with this bustling, busy step which reminds one very much of the restaurant-waiter, with his ever ready answer, "Yes, sir," "comin', sir." Descending a step lower, observe the ordinary mechanic, or workman, with his legs bent at the knees, pushed forward like a crank; he renders himself half-an-inch or so shorter by bending his knees, instead of walking straight from the hips. Contrast with his unsteady, awkward gait, the ambling, slouching dawdle of the fop; his feet seem as if they had suckers that glued them to the pavement, and as if it were a great pain and effort to drag his legs after him.

With women, too, some bump up and down at each step, like an india-rubber ball; others, again, go swaying along, sweeping the pavement with their skirts, and wriggling their body about as if their body and limbs were united by a ball and socket-joint (I have no wish to be offensive, but this is the nearest approach to the movement of those ladies with abnormally pinched-in waists). Others, again, go pittity-pat, pittity-pat, with their one-two, one-two steps, in a kind of leap and bound sort of movement. Every one of these modes of progression is totally devoid of gracefulness, and is infinitely more tiring and wearisome than a firm, easy-swinging balanced step, swung from the hip.

Not one of the types above mentioned walk in a natural way. Why? Because they have never been taught how to balance their bodies while alternately raising the feet in walking. Watch a Lifeguardsman or well-drilled soldier; does he jerk his shoulders about or swing his body? No; shoulders and body are perfectly still, and are carried forward steadily as each limb takes a fresh step. A well-drilled gentleman or lady, walking correctly, will pass by your side without you being aware of their presence; no fussy, noisy movement heralding their approach. They will glide by without the least apparent effort.

The exercise I am about to describe will enable the pupil to walk thus gracefully and naturally.

For the sake of being definite and practical in the instructions, I will imagine I have a class of pupils before me, and as these papers are intended chiefly to be devoted to such exercises as can be performed by girls and young boys, I will suppose the class to consist of such.

On the word "Attention!" the pupils will form up in line (that is, by the side of each other), about a yard apart, their feet turned out at an angle of forty-five degrees, and arms down by their side or else folded across their chest. On the command "Step to the front!" they will balance the weight of the body on the left leg, and advance the right leg forward, but not resting it on the ground.

In this movement the leg should be straight and stiff at the knee, the leg being swung forward from the hip only. The sole of the foot must be parallel with the ground, the toes compressed and slightly pointing downwards, so that if the foot were placed on the ground the ball of the foot would be the point to rest there (and not the heel, which is too frequently the point to strike the ground in ordinary walking).

On the command "Step to the rear," the leg must be swung backwards, the knee straight, and the foot must be so turned on the ankle that, in swinging from front to rear, the sole of the foot is kept parallel with the ground.

Be careful that in stepping to the rear the toes do not point to the ground. Considerable difficulty will be experienced in keeping the balance, which can only be overcome by practice. The commands, "Step to the front," "Step to the rear," should be given at intervals of half a second for five or six consecutive times, the pupil then allowed to rest, and the same movements gone through with the left leg.

In no case must the moving leg be allowed to touch the ground, for if it did no good would result from the exercise. After two or three lessons in this exercise, the pupil will gain such command over the muscles of the thigh, the tendons behind the knee, and the movement of the foot at the ankle, that he will be able to step out gracefully in walking; keeping the leg straight, not bent at the knee, the movement being done from the hip joint. When the power of balancing on one leg is acquired, the "slow march" should be performed. thus: Assume the position of "attention," as in the last exercise, and on the command "Slow-march," "left," "right," each pupil takes a step forward of 30 inches with his left leg, and then one of similar length with the right, each step forward being taken at intervals of one second. Of course between the intervals of stepping the pupil will be resting on both feet, with legs 30 inches apart. Each foot must be placed on the ground flat—not the toe or heel touching first. This slow march should be kept up for a dozen or two yards, being very precise as to the time between each step, the steadiness of the pupil, and the length of the step. The march should then be performed backwards, each pupil stepping to the rear, keeping his eyes to the front.

International Health Exhibition.

LONDON, 1884.

We publish to-day the first of a series of descriptive papers culled from official sources, and descriptive of the objects of the above Exhibition.

The object of the Exhibition will be to illustrate, as vividly and in as practical a manner as possible, Food, Dress, the Dwelling, the School and the Workshop, as affecting the conditions of healthful life, and also to bring into public notice the most recent Appliances for Elementary School Teaching and Instruction in Applied Science, Art, and Handicrafts. The influence of Modern Sanitary Knowledge and Intellectual Progress upon the welfare of the people of all classes and all nations will thus be practically demonstrated, and an attempt will be made to display the most valuable and recent advances which have been attained in these important subjects.

The Exhibition will be divided into two main sections, Division I. Health, Division II. Education, and will be further sub-divided into eight principal groups.

In the First Group it is intended specially to illustrate the Food Resources of the world, and the best and most economical methods of utilising them. For the sake of comparison, not only will specimens of food from all countries be exhibited, but the various methods of preparing, cooking, and serving food will be practically shown. The numerous processes of manufacture connected with the preparation of articles of food and drink will thus be exemplified; and, so far as the perishable nature of the articles will admit, full illustrations will be given of the various descriptions of foods themselves.

In the Second Group, Dress, chiefly in its relation to health, will be displayed. Illustrations of the clothing of the principal peoples of the world may be expected, and a part of this Exhibition will be devoted to the History of Costume.

In the third, fourth, and fifth groups will be comprised all that pertains to the healthful construction and fitting of the dwelling, the school, and the workshop; not only as respects the needful arrangements for sanitation, but also the fittings and furniture generally in their effect on the health of the inmates. The most improved methods of school construction will be shown, and the modes of combating and preventing the evils of unhealthy trades, occupations, and processes of manufacture will form portions of the Exhibition.

Group 3*a* will be devoted to the ambulance, and will illustrate its applications both in war and in peace. Naval and military hygiene will be included in this group, which will also contain exhibits illustrating the fittings and furniture for sick-rooms. Permanent civil hospitals are not considered as coming within the scope of the Exhibition, nor do medical and surgical appliances generally.

Group 5*a* will treat of meteorology in its relation to health.

The Sixth Group will comprise all that relates to Primary, Technical, and Art Education, and will include Designs and Models for School Buildings; Apparatus and Appliances for Teaching; Diagrams, Text-books, &c. Special attention will be directed to Technical and Art Education, to the results of industrial teaching, to the introduction of manual and handicraft work into schools, and also to specimens illustrating the results of Art and technical teaching.

Further details of the scope of the various Groups will be found in the Memoranda drawn up by the several Sub-Committees, which have been selected from Members of the General Committee, for the purpose of advising the Executive Council on technical matters.

REGULATIONS.

1. An International Health Exhibition, under the patronage of her Majesty the Queen and the presidency of his Royal Highness the Prince of Wales, will be held in London in 1884.

2. The Exhibition will be opened on Thursday, 1st May, and will continue open for a period of not less than six months.

3. The principal objects to be exhibited are comprised in the accompanying classification, which is intended to illustrate chiefly food, dress, the dwelling, the school, and the workshop, as affecting the conditions of healthful life, and also the most recent appliances for elementary school teaching and instruction in applied science, art, and handicrafts.

4. Medals in Gold, Silver, and Bronze, and Diplomas of Honour will be awarded on the recommendation of International Juries.

5. No charge will be made for space, but Exhibitors will have to pay every expense of transit, delivery, fixing and removing their Exhibits, and erection of counters when required, and they must, either personally or by their agents, superintend the despatch, transmission, reception, unpacking, and installation, and at the close of the Exhibition the removal of their goods; in default thereof the Executive Council reserve to themselves the right of doing whatever may be considered necessary, and at the expense of the Exhibitor. Should any goods be deposited in the Exhibition premises during the absence of the Exhibitor or his Agent, the Executive Council will not be responsible for any loss or damage, from whatsoever cause arising.

6. Applications for allotment of space must be made on printed forms, which will be supplied on application to the Secretary, International Health Exhibition, South Kensington, S.W., which must be filled up and returned on or before Feb. 1, 1884. After this date no application will be received.

7. The nature of the articles which it is proposed to exhibit must be fully specified in the Form of Application for space.

8. The applications will be laid before the Executive Council, and the Secretary will, as soon as practicable, notify to applicants their decision with regard to the amount of space, if any, allotted to them.

9. The Executive Council reserve to themselves the absolute right of refusing to admit any exhibit.

10. The Foreign and Colonial Commissioners appointed by their Government are invited to communicate with the Secretary. They will be charged with the consideration of all questions relative to the distribution of the space allotted to their respective countries, and the Executive Council will place at their disposal all information and plans that may be useful to them.

11. The applicants for space from countries in which no Commissioner has been appointed will correspond directly with the Secretary.

12. The Executive Council will endeavour to obtain from the various English Railway Companies special terms for the conveyance of exhibits to and from the Exhibition, and should they succeed in doing so, such arrangements will be communicated to intending exhibitors.

13. All packages containing goods intended for exhibition must have painted on them the distinctive mark I. H. E., together with the *name and address* of the exhibitor. Labels will also be forwarded to each exhibitor.

14. Packages from foreign countries must likewise have painted on them the letters I. H. E. They must all be marked in such a way as to show distinctly from whence they come, the name of the country, and of the exhibitor.

15. All cases, counters, platforms, &c., must not exceed the following dimensions, without special permission:—

Show cases and partitions	10 feet	above the floor.	
Counters	3 „	„	„
Platforms	1 foot	„	„

16. Exhibitors may place railings around their stands, subject to approval; but in every instance the railings must be within the area of the "stand"—*i.e.*, the space allotted.

17. The flooring must not be altered, removed, or strengthened for the convenience of arrangement, except by sanction of the Executive Council, and at the expense of the Exhibitor.

18. No Exhibitor will be permitted to display exhibits in such a manner as to obstruct the light or impede the view along the open spaces, or to occasion inconvenience, injury, or otherwise disadvantageously affect the display of other Exhibitors.

19. In order to ensure uniformity of decoration and general good effect, no Exhibitor will be allowed to put up any flags, banners, or other kind of decoration without special permission.

20. Signs or name-boards must be placed parallel with the main passage, that is, parallel with the frontage of the respective stands. These must be black with gold letters, and must be hung subject to the approval of the Council.

21. All handbills, printed matter, &c., connected with exhibits for gratuitous distribution, must first receive the approval and permission of the Executive Council, which permission may be withdrawn at any time.

22. Cases must be unpacked as fast as possible, and the empty cases taken away by the exhibitors or their agents. The Executive Council decline to accept any responsibility with reference to empty cases, which must be at once removed from the building at the expense of exhibitors.

Sanitary Appliances, Etc.

VINA-COCA.

This tonic has acquired a deservedly high reputation in all cases wherein a mild but efficient stimulant is required. "Vina-Coca" is not so much a medicine as a skilfully compounded "tonic wine," in which the virtues of the familiar coca plant are united to Madeira. In all cases of debility, general weakness, and loss of appetite, "Vina-Coca" may safely be tried. It possesses a pleasant taste, and is altogether an agreeable tonic, without possessing any disagreeable effects or violent action. In addition to its tonic properties, "Vina-Coca" certainly possesses a high degree of nutritive power, and also serves as a preventive of too rapid waste or excretion.

THE "ARMSTRONG SPIRAL BRACE."

The present age, in respect of its dress-improvements and innovations, bids fair to rank very distinctly in the lists of the centuries. The ladies are not allowed to be sole occupants of the field of dress reform, and the wave of improvement has swept across the pathway of the sterner sex, whose apparent ease and comfort form the envy and admiration of "rational dressers." The male mind, however, is not much given to airing its grievances in the way of dress. Now and then a complaint regarding a tight boot, or a grumble at an ill-fitting hat may be heard; but the misery of a brace which cuts into the shoulders and chest, which causes stooping habits, and which renders easy walking an impossibility, is well known to every male mind. Various contrivances have been suggested by way of overcoming the manifest objections to a brace which is constructed on faulty principles, and out of the brace question arose the controversy of "belt *versus* braces." Compression of the male waist is just as injurious as is the similar process applied to the female chest, and it must be confessed that the familiar fashion of slinging the "unmentionables" from the shoulders is the most natural of all methods of support. In order that this support may be made a matter of ease, however, it is necessary that a really good brace should be worn. The coarse leather braces, or the equally objectionable elastic braces commonly sold in shops, are to be rejected, simply because there is little or no pliancy in them, and because they certainly favour habits of stooping. The latest improvement which has been submitted to us in the form of a brace is styled the "Armstrong Spiral Brace." By an exceedingly ingenious spiral arrangement the pressure or strain on any part of the brace or body is at once equalised. Freedom of movement is also duly secured with this brace as an article of attire, and all who are engaged in active manual labour, as well as those who indulge in any form of exercise, will find this brace a comfort and a luxury as compared with the old-fashioned style. The brace is strongly made; its parts are simply designed, and its fixation is easy. In this brace, we therefore welcome another to our store of rational dress articles. There is one hint which should be added regarding the wear of braces, namely, that the trousers should be cut of a proper length, so as not to demand an excessive appeal to the drawing powers of the braces by way of preserving them from wear below. Given a trouser of proper length and an "Armstrong Brace," and we should be able to defy stooping-habits, and to solve the vexed question of clothes suspension in the sterner sex.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

LETTERS TO THE EDITOR.

CHILDREN'S DRESS.

Sir,—Although I had no wish to do so, I was led by Mr. Maxwell to give my opinion of corsets, which, if not tightly laced, I approve *under present conditions of dress and society*. This opinion seems to have raised a storm in the minds of the leaders of the two rival camps of dress reform; but the words I have now italicised show how innocent I was of having anything to do with them. They are at present the inconsiderable minority. When, however, they produce a form of dress which will enable me to *reform* my own with decency and increase of comfort, I shall be most happy to adopt it and relinquish my stays. Probably the majority of ladies who now share my view on this head will do the same. I am pleased to see Lady Harberton's mention of the "Kindergarten Frock" shortly to be introduced by Miss Franks. If it had been in existence when I wrote my article on "How to Clothe Children," I should certainly have recommended it; but as it was not, I can hardly be blamed for omitting to do so.

Although I shall always be happy to answer any civil questions put to me in good faith by your correspondents, I have neither taste nor time for controversy, and will not be led into it. If Mr. Maxwell and Mrs. King really think children ought to run about barefooted, by all means let them continue to think so, but I cannot see why they should take it upon themselves to be angry with me because, living as I do in England and not in New Zealand, I cannot share their opinion.

It is a strange thing that people have not yet come to realise the truth of the dictum—"Circumstances alter cases."—I am, Sir, yours truly,

Ada S. Ballin.

14, Tavistock-square, W.C., Feb. 8.

IMPORTANCE OF PROPER SUPERVISION AND PROPER TESTING IN CONNECTION WITH THE VENTILATION OF DRAINS, &c.

Sir,—We think it desirable, in the interest of architects and sanitary engineers, as well as in fairness to ourselves, to ask leave to call your readers' special attention to the necessity, not only of carefully testing any works at which *our* system may have been applied, but also of insisting on a *proper* result being established, as in *several* cases where our appliances had been used we have found that a proper current of air through the drains has not been obtained.

In one instance quite lately, in the neighbourhood of Holland Park, where the works had been carried out under our "direction," finding after completion that *no* current of air was observable at the inlet, which had been specially designed for the purpose of ventilating the drain and soil-pipe, and knowing that this ought not to be the case, we felt certain that there *must* be some improper obstruction, and upon examination that proved to be the case.

Water passed freely enough down the soil-pipe, but on the ground being opened, near the sentinel trap in the drain against the sewer, a complete stoppage was found in the fresh air inlet-pipe, formed by a stone wrapped in a piece of painted canvas.

This must have occurred either from extreme carelessness or was wilfully placed there to bring discredit upon our system of drain ventilation.

We may mention that prior to the obstruction being discovered, it was suggested by the workman that the Banner Cowl should be removed as failing to do its intended work.

We may add that the position for the obstruction, if purposely placed, was particularly well chosen, as the said inlet-pipe was intended to admit only fresh air into the drain.

We repeat, therefore, that all architects, sanitary engineers, and others, after the works are said to be complete, should insist, as we do ourselves, that it should be proved there is a current of air passing through the drains, &c., as this result cannot fail to be obtained wherever our system of sanitation is properly carried out.—Yours faithfully,

Banner Brothers.

11, Billiter-square, London, Feb. 5, 1884.

A HOUSEHOLDER'S GRIEVANCE.

Sir,—I perused the letter of your correspondent in reference to his house drains with great interest. We lawyers are, not altogether to our profit, well acquainted with the wiles of the speculative builder, which sometimes appear to compete hotly with our own innocent amusements (as attributed to us by the laity). But I do not remember having met with a worse case than your correspondent's. This may be small consolation to your householder. He has, however, the greater consolation of being in a position to recover damages for the false representation. Had he insisted on his rights early enough (I infer from his letter that he has been in possession for some time), he might, perhaps, have insisted on rescinding the purchase. The case is, however, a clear one for damages, and I recommend your correspondent to make a claim against the builder at once.—Yours faithfully,

Hood Barrs, LL.B.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending HEALTH to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

GENERAL.

SWANSEA VALE.—Diastase is a soluble nitrogenous principle contained in malt; when acting upon starch it forms dextrine and dextrose. Dextrose is grape or starch sugar, not present in the wine to which you refer. Very sorry that your letters, the receipt of which we acknowledged at the time in HEALTH, were destroyed long ago.

E. BARRY.—Thanks for your note. We take a deep interest in physical education of all kinds, and are pleased to hear of your success. We are sorry that at present, owing to numerous engagements, we cannot avail ourselves of your kind invitation.

MAY.—We have never heard of the practice to which you refer. But we believe there is an allied practice extant in some Continental towns.

J. SIMMONS.—We think with you that the law should be made general in its applications. At present as the law stands, it appears to allow quacks to prey upon the innocent equally with those who are less exposed to their attacks.

GEORGE GILL.—It would seem that there has been some misunderstanding on the part of the person you name. We do not see how the mistake can be amended now.

AN INQUIRER.—We agree with you that the special conformation of the face cannot be altered by any physical means, but much may be done by the exercise of judicious treatment to strengthen and fill out a too thin or ungainly form. The article to which you allude dealt with general principles only, and not with special cases such as that to which you refer. 2. The book to which you refer professed to give a number of instructions in the production of what we suppose may be called beauty on physiological grounds.

HYGIENE.—Try Corfield's "Laws of Health," published by Longmans, price 1s. 6d.; also, "A Handbook of Sanitary Science," by Dr. Wilson, published by Messrs. Churchill.

DARK GIPSY.—Write to Messrs. Churchill, 11, New Burlington-street, London, W., and to Messrs. Baillière, Tindall, & Cox, Southampton-street, Strand, for catalogues of their works. We should think Roberts's "Practice of Medicine," Erichsen's "Surgery," or, the "Cyclopædia of Medicine," along with Quain's "Dictionary of Medicine," published by Messrs. Longmans, would be highly suitable. Glad to afford any further information required.

G. NICHOLSON.—Thanks for your suggestion, which shall have our attention.

ALLIANCE.—We know nothing whatever of the two preparations to which you allude. We can only say that personally, and judging from the preparation, they resemble other quack remedies, and, in this light, we could not recommend you to waste your money on them.

SANITARY.

AUSTIN.—The calculation to which you refer of the number of spores or germs contained in a single drop of fluid, the number being set down at 250,000, was that of Mr. Dancer, of Manchester. He calculated that 37½ millions of these spores, exclusive of other substances, were contained in eighty-eight cubic feet of Manchester air, a quantity which a man of ordinary size would take into his lungs in ten hours when actively employed.

CREWE.—The ammonia in water arises from the decomposition of organic or living matter.

A. ADDINGTON.—It is said that in the City of London as many as thirty-five tons of meat, dressed for sale, may be seized in one day as unfit for food.

INTERESTED.—Ergot is a fungus attacking rye and wheat. Smut is another fungus found on barley and oats.

E. E.—Good flour should contain eight per cent. of gluten.

ANALYST.—We believe the test to which you allude is that of Donne, which consists in pouring nitric acid and ammonia on flour. If adulterated with beans, a deep red colour appears.

MEDICAL.

AN ASSISTANT.—The symptom you mention does not in your case occur too often, and when you recover from your nervous state you will be quite well. Where you cannot have a cold bath in the morning you may obtain the same effect by dipping a towel in water and freely sponging your body therewith, using a dry towel and brisk friction thereafter. You might continue to take the tonic twice a day at intervals for a little time.

T. TURNER.—1. No: if you pay great attention to your ordinary mode of life. 2. Yes, if no symptoms of the kind you note appear. 3. Mind control in your case is quite as important as health of body; the two are mutually dependent.

DAREX.—Yours is a case in which we should strongly recommend you to take rest for a period, and likewise to seek a change. A visit to some mild seaside place would benefit you. We are persuaded you are simply out of sorts through overwork, and possibly nervousness induced thereby.

AMICUS.—Try the effect of thorough washing with Pears' Soap and tepid water night and morning, and use for a time a little plain Vaseline thereafter. Write again if not improved.

MEXICO.—You do not give a very clear account of your symptoms. Try what the remedy recommended to "Pedagogue" in HEALTH No. 44 will do for you. If not better write more fully.

DETECTOR.—The author of the pamphlet is a qualified medical man, but it is needless to say his practice both of advertising and of circulating such a pamphlet as that you enclose does not meet with the approbation of his profession. We know nothing of his treatment, but our opinion is that any practitioner knows quite as much about reliable methods of cure as the person you name.

R. DERONDA.—We fancy that you are over nervous about yourself. We should strongly recommend you to try for a time to live on extremely light food, such as milk, light puddings, eggs, and nourishing soups. In this way, by giving your digestive organs a rest somewhat, you will be able to conquer the symptoms you describe. It is very probable also that a prolonged rest and a change of air would be highly beneficial to you. Glad to be of any further service.

PHYSIOLOGICAL.—No doubt we occasionally breathe a vast quantity of air in which the proportions of carbonic acid and organic matter exceed the health proportion. And in the lecture from which you quote reference is made to this. You should also bear in mind that there is an unfortunate tendency on the part of the human system to become accustomed to impure atmosphere, and to engender disease thereby. The exhalations from the skin add to the watery vapour, but do not materially increase the carbonic acid. You should have no doubt the impure atmosphere you breathe affects the whole life of the individual,—including the brain action, through that organ not being supplied with aërated blood. The common stair, to which Dr. Wilson alluded in his lecture, is the Scotch staircase common to houses built in flats. As usually seen, both in England and in Scotland, such a staircase is simply a shaft which, when ill-ventilated, is full of noxious gases.

HOPEFUL ONE.—We are glad that our condemnation of quacks has saved you from committing yourself to the hands of these impostors. You should not be nervous about yourself. What you complain of will be readily cured by simple attention to diet, &c., as recommended to "A. Keay" in present number. Take plenty of open-air exercise, and on no account believe in quacks.

A. J.—We fancy that in your case what you require is a thorough change of air to a bracing locality for a period. This would very likely benefit you immensely. It is clear you are also mentally depressed, and the change would benefit your mind as well as body. We should recommend you also to try the effect of a complete change of diet, beginning cautiously by experimenting on the effect of a vegetable dietary, which may relieve constipation. Your food might for a time consist also of milk, light soups, and puddings. Glad to be of further service.

AN ANXIOUS INQUIRER.—You must give up aperient medicines and follow advice given to "A. J." above with regard to vegetable dietary. Your food should also be light, as above indicated, and, in all probability, a change of air will do you good. Some "Pepsine" might also be taken along with food. Let us hear how you are after a trial of our advice.

PORTER.—See advice given to "Hopeful One" above, and beware of all advertising quacks. Do not be morbid; above all else there is no reason to fear.

XENOPHON.—We certainly think the practice of the Zander Institute would greatly benefit you. We have seen such cases as yours remarkably benefited by such exercises as are there practised. Call and inspect the Institute. The surgeon there will give you every information.

W. R. DIAMOND.—We sympathise very much with the statement you enclose. It is just possible that many of the symptoms may be due to the condition therein mentioned. Under these circumstances our best advice to you is that should place the patient entirely under the supervision of a reliable physician; there are many points in the case which evidently require a doctor's watchful care.

J. ROBINSON.—You evidently obstructed in your sleep the circulation in your arm. Rub the wrist and arm night and morning with hot oil.

F. T. Andrews.—Try the effect of a little cod-liver oil emulsion taken through the winter. Clothe warmly and let your food be nourishing. You probably suffer simply from weak circulation.

W. B. A.—Kindly note that all letters must be addressed to the Editor of Health, and not to the publishers. Rest after meals; avoid all quack medicines, and take a little Pepsine with your food. By careful living you will outgrow your troubles.

Grace.—It is probable what you complain of will disappear in time. Meanwhile you might try the effect of rubbing the weak muscles with warm oil.

Birch.—See advice to "A. Keay," in present number.

J. P.—Touch the wart with a little aromatic vinegar, being careful to keep the vinegar from getting into the eyes, or from touching the skin around.

Rellimac.—In all probability, what you mention is simply a symptom of a slight weakness. It will disappear through taking rest, plain food, and for a time, 10 drops of *Fer Bravais* thrice daily in a little water. Write again if not better. There is nothing infectious in your case.

Questioner.—You should see a surgeon, as what you complain of will be easily remedied. We can send you the name and address of a reliable surgeon on receipt of a stamped addressed envelope.

Daisy.—You should know that asthma is a disease which is induced by any irregularity of living. If your digestion is out of order, this is a more than sufficient cause for the attacks. Our best advice to you is to see carefully to every detail of your general health. A change of air is likely to be beneficial. If not improved write again.

Hadrian.—The eruption is a common sequence of the trouble you name. We should advise you firstly to attend carefully to the general health, and to take fifteen drops *Fer Bravais* in a little water thrice daily. When threatened with your trouble you must clothe warmly, and let your food be light, nutritious, and not stimulating. Glad to be of further service.

Compos Mentis.—In your case we should advise you to try the effect of cod-liver oil, a dessertspoonful taken thrice daily after meals. Clothe warmly, and let your food be light and nourishing. You do not seem to be in ill-health, but only require care in regulating your food and the other details of your living.

Lenore Gulphino.—In all probability a surgeon would at once by an examination of your throat detect the cause of all your troubles. We incline to the belief that your uvula may be a little elongated, and may require a slight operation. Such symptoms as yours often arise from very slight causes.

Adieu.—Our advice to you is to rest after food, eat plenty of fruits, and take a little "Pepsine" with your food. Do not despair. Why not try a temporary change to the seaside for a month or so? This would likely set you on your feet again.

Hygeia.—To your present mode of dietary we see no objection. Dilute your claret with water. Kindly describe again, in exact terms, the nature of the skin complaint from which you suffer. We do not preserve letters.

J. P. L.—We fancy your confined occupation tells against your health. Try to obtain more fresh exercise. Take the claret, but without the lemonade or sugar. The tonic recommended to a "Morbid Mind" in present number might do you good.

W. Muir.—Yours is a case in which nervousness alone is making you ill. You have nothing whatever to fear. Cases like yours are perfectly common, and you will get quite well by simply attending to your general health by taking a cold sponge-bath, if it can be borne, every night and morning, and by getting rid of all your morbid fears. The medical opinion you had was perfectly sound. You are quite well. Have no fears for the future.

Mother.—We should recommend rest and hot salt-water bathing occasionally. The symptom you mention may possibly be due to a little gout. If it increases in severity, you must see a doctor.

Beatrice.—You must not work so hard, as what you complain of certainly arises as much from nervous exhaustion as from any other cause. From 15 to 20 grains is an average dose of bromide of potass; but you must not make a habit of taking this medicine.

A City Artisan.—Try the tonic recommended to "Morbid Mind" in present number, and see that you are not over-worked. Food to be light and nourishing.

Ulster.—We do not know anything of the medical man you name; as far as the system of treatment he practises is concerned, it is correct enough. You might try the effect of inhaling the steam from a pint of hot water, into which a teaspoonful of Friar's Balsam has been placed. This may be used for ten minutes twice or thrice daily, but great care must be taken against cold after the inhalation.

Abacist.—Try washing the hands with a saturated solution of boracic acid. 2. No. Camphorated chalk is the best dentifrice we know of. 3. Depends entirely on the source of the ailment. If this is stated, we shall be glad to advise you.

Sperens.—You must look to your food. Avoid all unwashed vegetables. Try an infusion of quassia injected daily for the children. For yourself an injection of perchloride of iron, half an ounce to a pint of water, may be tried.

J. Harvey.—Wear a suspensory bandage, and take ten drops of *Fer Bravais* twice daily in a little water.

Peety-Weety.—No; iodine is not adapted for the purpose you mention. Inquire at your druggist's, who may be able to let you have a cheaper preparation. Ascertain, however, that it is a reliable one.

Desideratum.—1. We should advise you to wear woollen socks' as coloured cotton ones are not adapted for you. 2. Certainly; take off all your body-clothes and put on special and clean night apparel on going to rest. 3. We know nothing of the Association you name, save that in all its ways and practices it closely imitates the ways and works of quackery. The person you name is not on the list of qualified medical men. Better far trust yourself in the hands of a qualified practitioner. The recipe you give will closely imitate the "salt" you name.

North Devon.—No objection to your proposed trip. The Engadine would suit you, we fancy. The symptoms you complain of appear to be largely those of dyspepsia. Try a change of food, eat fruits and vegetables, and take Morson's "Pepsine" with food as directed. Rest after food especially, and avoid stimulants. A change to the south coast—Bournemouth, Hastings, or Brighton—might even now suit you. Glad to be of any further service.

F. W. D.—You cannot proceed against the firm you name without some cause, and you do not name any such cause in your letter. If you wish to prove them to be quacks to your own satisfaction, write to them asking the names and addresses of the physicians and surgeons they keep on the premises. We can then inform you if their names are on the "Medical Register." The pamphlets savour of the usual quackery.

Compos Mentis.—You are extremely foolish to place any dependence whatever on the opinion of any "medical phrenologist and botanist." For your pimples, try the remedy prescribed to "Alga" in Health No. 45. [See also reply in opposite column.]

Morbid Mind.—Follow advice to "North Devon" above. Let your food be light and nourishing for a time; and you might also try as a tonic a teaspoonful of Fellows' "Syrup of the Hypophosphites," thrice daily in a wineglassful of water. Don't be morbid, and let us hear how you are shortly.

OH_2.—Simply careful living—nourishing food, plenty of fresh air, no stimulants, and a little of the tonic recommended to "Morbid Mind" above, occasionally. Food to be light as a rule. There is no special diet, except, perhaps, white fish, of which eat plentifully at times.

Edinburgh.—Live plainly, avoid all stimulants, use weak injections of Condy's Fluid and water (1 part Condy to 20 water), night and morning, and for a tonic take ten drops *Fer Bravais* thrice daily in water. Rest as much as possible till thoroughly well.

A. C.—*Lemon* juice will do you no harm. Guard against cold, and try hot salt water baths occasionally.

Suffering Will.—Avoid all stimulants; live plainly; clothe warmly; and try the following:—Bitartrate of potass, 3 drachms; infusion of buchu, 6 ounces. A tablespoonful thrice daily. Let us hear how you are in a few days.

W. R.—Procure some of the water, and send it to a chemist to be analysed, in which case a poison, if present, might be detected. The details you give are so general, we cannot pronounce any opinion on the case.

A. Keay.—Sleep on a hard mattress; try cold sponging night and morning; avoid fluids late at night; live plainly; avoid stimulants, and take plenty of open-air exercise. No need for any electrical apparatus. The tonic recommended to "Morbid Mind" above should also do you good.

Sociable.—What you complain of may arise from a large number of different causes. Send particulars of health, &c.

A Subscriber.—1. Yes; may be cured, but only under efficient and, for a time, constant medical supervision. 2. Depends on nature of ailment entirely.

Hopeful Brother.—Attend to the general health, and follow directions given to "A Keay," in present number. If there is any weakness, and a tonic is required, try that recommended to "Morbid Mind."

W. H.—In such a case as that you mention, and considering the advanced age of the patient, we think your best plan will be to consult a reliable physician. It is probable that the symptoms may be those requiring medical advice.

C. W. G.—We imagine you are overworked, and your occupation probably induces some slight strain. We should advise you, if possible, to procure some lighter employment; and as regards diges-

[*Continued on page* 336.

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tion, take a little "Pepsine" with your meals. You will sleep better when your digestion is restored.

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T. W. C.—You do not give us sufficient particulars to enable us to judge; but when the pain is severe, apply hot fomentations and take internally 15 grains of bromide of potass dissolved in a wineglassful of water.

E. F. H.—No great amount of exercise should be taken on an empty stomach. A pipe is preferable to cigarettes. Moderately indulged in, as you remark, a pipe or cigar will do you no harm.

Knee-Cap.—We should recommend you to see a surgeon at a hospital or elsewhere. You will probably be advised to wear an elastic knee-cap, such as can be obtained at any surgical instrument makers.

J. B. B.—We think yours is a case in which a thorough medical examination by a competent physician is the only means of relieving your mind. Your symptoms may be due to a variety of causes. If not able to afford a fee, apply at an hospital: your case is one for personal examination.

Marital.—Cases like yours are by no means uncommon, and may depend on some slight obstruction. We should recommend you to use a little pure "Vaseline" as an application. There is no disease in the question, but for your own sake you might make a thorough examination and let us know if you discover any condition to account for your difficulty.

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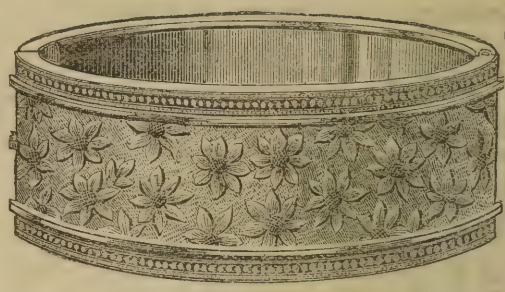

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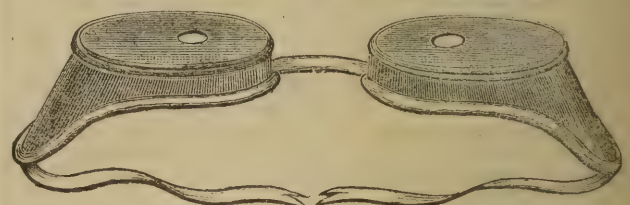

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 29, 1884.

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Notes By the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The fifth report of the German Cholera Commission has been issued. This report is written by Dr. Koch, and contains information of highly important kind respecting the nature of the "cholera germ." A *bacillus* or living speck (allied to that alluded to by our contributor, "M.D." in the present number of Health, in his article on "Consumption") was found associated with the cholera in Egypt. This *bacillus* or germ has been met with again in India, where the Commission is engaged in pursuing its researches. So that primarily we may take it for granted that cholera, like consumption itself, is a disease which owes its infectious nature, if not its origin, to the existence and development of these living particles in the human tissues. Further, an important step has been made in the elucidation of the history of the cholera-germ by Dr. Koch, who, it may be added, was the discoverer of the *bacillus* of consumption. The German commission expresses the opinion, that although the cholera-*bacillus* cannot be distinguished from other living particles of like nature found in the intestines, it has been found possible to recognise the cholera-germ by special characters witnessed during its artificial propagation. This is the first and most important step in the whole investigation. If cholera is the result of the development and propagation, within the human frame, of a *bacillus* or living organism, it is clear we require to know the characters of the germ, and how it may be recognised, before any practical results of value can be satisfactorily deduced from the labours of the microscope.

* * *

The Commission likewise asserts that the distinctive cholera *bacilli* were absent from cases of dysentery, lung-inflammation, consumption, and other diseases. As yet, however, there has been no light thrown on the connection between cholera and the *bacillus* from the experimental side. As our contributor "M.D." has pointed out, "tuberculosis," or the disease of which consumption itself is a manifestation, can be communicated to animals by inoculating them with diseased matter containing the *bacilli*. In the case of the cholera-*bacillus*, no such results have yet been attained. Attempts to communicate cholera to animals have failed; but Dr. Koch mentions that he has instituted a new series of experiments, from which he hopes for fresh light in this direction. A good deal of criticism, not altogether of kindly or fair character, has been passed in this country on the labours of the Cholera Commission. But when we consider the difficulties of the task in which Dr. Koch and his colleagues are engaged, and likewise reflect upon the tedious nature of such investigations, we may well be content to wait patiently for the final reports of the Commission's labours, and to rest assured that a very intricate series of researches is being conducted with all necessary skill and ability.

* * *

Our contemporary, the *Lancet*, in a paragraph referring to the distribution of "quack-handbills" in the streets, thinks that the men engaged in this nefarious work exhibit "more caution than of old." This is not our experience. Last week, if the *Lancet's* correspondent had chanced to pass either Piccadilly-circus, Regent-circus, or to walk along Oxford-street, London, he would have seen the quack emissaries as busily engaged as ever in their labours. Our contemporary speaks of the distributors of these bills abstaining "from offering the 'bill' to persons who look likely to take offence and, perhaps, expose them." Is the *Lancet* aware that the distribution of such bills in the streets of London is not an offence at law? Our appeals to Mr. Howard Vincent and to the Public Prosecutor proved this long ago. If our contemporary can invent and put in operation any method by which the "quacks" could be exposed, it will be well entitled to the everlasting gratitude both of the public and of the medical profession. As things at present stand, the London quack can bring his wares unblushingly, and without fear of the police, under the public notice.

* * *

A correspondent writes to point out the danger which is likely to attend the practice of adding common soda to vegetables in process of being boiled. There is no doubt that the addition of crude washing soda to any articles of diet is a hurtful process. But we are not aware that this practice is at all common. Bicarbonate of soda is often used to preserve the green colour of vegetables. No great harm, so far as we can see, can attend this latter practice. Washing soda, on the other hand, should never be used in contact with food-articles of any kind. We quite agree with our correspondent, however, in the assertion, that not even bicarbonate of soda is required to make vegetables green, if they are properly cooked.

* * *

We have pleasure in calling attention to the fact that a Demonstration of Gymnastic Exercises, adapted for the use of girls, will be given by the ladies of Miss Chreiman's classes, in the Town-hall, High-street, Kensington, London, on Wednesday, March 5, at 3 p.m. Lord Brabazon will preside on the occasion; the demonstration taking place under the auspices of the "National Health Society." Tickets may be had on application to the secretary, 44, Berners-street, W. We are glad to notice that increased attention is being paid to the physical development of girls, and from the nature of the programme, which is to be performed by Miss Chreiman's pupils, we anticipate that a thoroughly interesting afternoon may be spent on the occasion to which we refer.

Those who wish to read a powerful, energetic, and reasonable piece of advocacy of health-education, including physical training for the young, should read the two lectures (recently delivered in the "Edinburgh Health" course) by Mr. H. H. Almond, of Loretto School, on "The Difficulties of Health Reformers." The lectures, price one penny each, are to be obtained from Messrs. Macniven & Wallace, Edinburgh. Anything more forcible in the way of protest against the neglect of ordinary means of health-improvement than Mr. Almond's discourses we have not read for a very long time.

✣ ✣ ✣

The "London Sanitary Protection Association" held its annual meeting last Saturday, and discussed various important items contained in the Council's report for 1883. It is gratifying to observe that the Society's engineers, when called on to inspect houses, frequently find the sanitary arrangements without fault. "This never occurred three years ago," says the report; and that some progress in sanitation is being made appears evident. We may hope for rapid improvement in this respect should the Bill for the Sanitary Inspection of Houses become law. In the latter event, what is now a chance and haphazard matter will become a national duty, performed by, and according to, law. The sooner such a Bill is passed the better. If people will not voluntarily ward off disease from themselves and their neighbours, the sooner they are compelled to do so the better. Compulsory education in health is quite as important a matter as compulsory education in the three "R's."

✣ ✣ ✣

The Royal Commission dealing with the dwellings of the poor has now been constituted. It may be fairly hoped that, in the hands of such a thoroughly representative body, the topic will receive that full share of examination to which it is certainly entitled. Naturally, the influence of a Royal Commission will extend throughout the length and breadth of the land. It is not too much to add that no more important sanitary measure than that which will be inaugurated at the first meeting of the Commission has been brought forward for many years.

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A curious source of health-danger has been lately ventilated. Illness, suspected to be due to metallic poisoning, having arisen in a family, the medical attendant was at his wits' end to account for the cause of the ailment. Drains were examined, water analysed, and so forth, but without success, in so far as the discovery of any poison was concerned. At length the kitchen-boiler was overhauled, with the result of finding a large piece of red-lead, which had been carelessly left therein by the workman who had last repaired the boiler. In mysterious cases of household poisoning, it may, therefore, be as well to bear the kitchen-boiler in mind—more especially if that receptacle has recently been in the hands of workmen for repairs.

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Paris possesses a "night medical service," and recent statistics confirm the high opinion which has been expressed regarding the utility of such an institution. In 1883, we learn, no fewer than 6,899 visits were paid; while in 1876, the first year of operations, only 3,616 visits were chronicled. The scheme might, with advantage, be introduced into all large towns and cities, where the exigencies of life and death are so many and imperative.

Original Essays

"Life is not to live, but to be well."—*Martial.*

CAN CONSUMPTION BE COMMUNICATED?

By M.D.

The old idea of consumption was that of a wasting disease, which had its representative condition in other parts and organs of the body. "Tuberculosis" is the name given to the common condition or disease of which consumption (or *phthisis* as it is called—pronounced "*thysis*") is the special phase or form attacking the lung. In examining a case of consumption, we note, of course, the wasting to which the body has been subjected. In the first stage deposits of what has been called "tubercle" form in the lung. This is the disease-material. Later on, the tubercles grow softer, break down, and form "cavities" or spaces in the lung, thus destroying the lung-tissue. The organs of breathing are, in fact, attacked by a peculiar disease which destroys their substance to a greater or less extent, and which produces in the body generally the signs and symptoms of the wasting we know to accompany consumption as a marked feature of its course. Within the last few years, however, a marked change has passed over the field of medical opinion regarding consumption and its cause. The information which has been acquired concerning this disease becomes of vast public importance when we reflect that upon a knowledge of what consumption really is, the people here, as elsewhere, may make health-capital out of "saving knowledge," and may be led to prevent disease by an exercise of such knowledge.

Not so very long ago, it was discovered that, associated with the masses of "tubercle"-matter found in the lungs in consumptive cases, certain microscopic particles, called *bacilli*, were continually found. It was Dr. Koch, a young German physician, who discovered the *bacillus* of tubercle. He found, in other words, associated with the matter, formerly regarded as the essential element in and cause of consumption, microscopic bodies, rod-like in form, and recognisable as related to other bodies found in close connection with various diseases. These rod-like *bacilli* vary in size. Their average diameter is about half that of one of the red globules of our blood—namely, about one-sixth thousandth part of an inch. Koch, discovering these *bacilli* in consumptive lungs, was naturally led to ask, "Are the *bacilli* the cause, or merely the result, of the disease?" The reply to this all-important question could only be determined by an appeal to nature herself; and there is only one way in which important truth can be elicited in such an appeal—namely, by experiment. Koch found that if he took some of the *bacilli* from a consumptive lung, and inoculated (that is, introduced into the blood) animals, such as rabbits and guinea-pigs, with these particles, he could produce in due time in these animals all the features of the dread disease. The animals lost flesh, became emaciated, and finally died; their bodies on examination revealing the characteristic features of the tubercle-disease with which they had been inoculated.

These experiments would seem to confirm what is believed by some of the most accurate observers in England and abroad, that the *bacilli* are the cause of consumption. "What are the *bacilli?*" is a question which has been already answered in the papers on "The Germ Theory," published in the pages of Health some months ago. They are microscopic forms of life—probably of plant-life. They breed as do the lowest plants. They grow from minute

bodies called "spores" or "germs," and apparently find as natural a habitation within the body as do certain of their neighbours—such as the *fungi* that produce skin-diseases—on the outside of our frames. There appear to be many varieties of these *bacilli*. Some, so far as is known, are harmless in their characters. Others, as we have seen, are invested with the power of producing disease. The splenic fever or *charbon* of cattle and sheep is caused by a *bacillus*; and it is probable that most of the "fevers" that afflict us are produced, each, by its own and special form of lower life. The latest science has thus revealed to us fields of life existing and flourishing within life of a higher type. The modern theory of infectious diseases is that which contends that such ailments are caused by living particles, and not by dead or lifeless matter. The fever is merely the outward and visible sign of the growth, within our frames, of lower organisms which have seized upon our bodies, and have found therein appropriate conditions for successful multiplication.

The important question, "Is consumption an infectious disease?" has to be answered in face of the foregoing facts dealing with the nature of the ailment. There has long existed a belief in the popular mind—founded, no doubt, on that untrained experience which is in itself a powerful teacher of facts—that consumption is "catching." People have long possessed the idea that it is not a good or wise practice to permit the consumptive and the healthy to sleep together, and as we shall see there is apparently every justification for this idea. If the *bacilli* are the causes of consumptive disease, and if, as experiment proves, they are coughed up from the lungs of patients, and pass out in the breath, it is by no means a far-fetched supposition that they may be inhaled by persons whose "predisposition" (or bodily tendency) or health, is such as to adapt them to become infected. If, as we thoroughly believe, consumption *is* infectious in this sense, the *bacilli* or microscopic living particles, passing from sick lungs to other lungs, susceptible in one way or another to their influence, constitute the means of infection.

But very recently there have been laid before the medical profession an interesting series of observations connected with the communicability of consumption. "The Collective Investigation Record" of the *British Medical Association* has supplied us with a variety of cases illustrating this latter tendency. Leaving out doubtful cases, and those in which no evidence tending, one way or the other, for the infectious nature of the disease has been noted, there remain a list of cases, recorded by medical men, in which the evidence for the infectious nature of consumption is singularly complete.

In 119 cases, the disease is recorded as having been transmitted from husband to wife, and in 69 from wife to husband; while in 130 of these cases, it is stated, there was no family tendency to the disease in the partner to whom the disease was conveyed. In 32 cases, there was infection between brothers and sisters, and *vice versâ*. What, however, are we to think of strange cases such as the following?—A servant nurses her master and mistress; the former contracting consumption from his wife, and the servant dying in turn of the disease. A dressmaker, aged 48, "living in rather a lonely cottage," had three girls, apprentices, *not related to one another*. These girls resided in turn, for a week at a time, with the mistress, occupying the same bed as the latter. During their apprenticeship, the mistress died of consumption; and, *in less than two years afterwards, all three apprentices died of consumption*. There was no family tendency to the disease in the history of any of the girls. A healthy servant girl, aged 19, slept for several months with a fellow-servant. The latter left her situation on developing consumptive symptoms; and the healthy girl ultimately developed consumption, and died of the disease—no other member of her family having been affected before or since. A child, with an absolutely healthy family history, was nursed by a consumptive servant. The child contracted the disease, which, as might have been expected, ran a rapid course, and ended fatally.

It is needless to prolong the list of such cases, which, in their plain, unvarnished statement of facts, taken along with the scientific history of the disease, supply a clearly affirmative answer to the question which heads this article. That which is of supreme importance, as a practical deduction from the latest facts of science, is the health knowledge we acquire from a study of consumption and its history. We may sum up our health-maxims concerning consumption as follows:—

1. In any case of chest-trouble of consumptive nature, it is highly improper for the patient to occupy the same room with another person.

2. This holds especially true of the case of the young, who should be carefully supervised in their relations to possible sources of danger from nurses and others.

3. The ventilation (and disinfection) of the rooms occupied by consumptives should be continually practised. The disinfection of all matters brought up from the lungs should also be thoroughly carried out.

4. The high importance of maintaining the *general health* is also indicated; for it may be laid down as a general rule that consumption (and all other diseases, in fact) is more likely to attack us when our health is below par, than when we are in good health. A low condition of the general health is, in fact, the borderland leading to many diseases.

FIVE TERRIBLE YEARS.

By James Clough.

PART THREE.

In 1351, the plague passed from Germany to Russia; for, by a most curious freak of its own, it attacked this land not from the Crimea on its first arrival in 1349, but only after the wave had gone a three years' course round Europe. We may presume that for some reason or other—probably in consequence of its warmer climate—Southern Europe presented to the germs of the disease a more favourable hunting-ground than the inclement north.

It is, of course, impossible to calculate with any exactness the total number of the victims of this terrible epidemic, for in those days no Government possessed anything like an approach to a Registrar-General's Office, nor did bills of mortality come into use until the constant recurrence of this Eastern plague showed statesmen the desirability of reliable data on such matters. Pope Clement, indeed, seems to have had some such idea, for he requested information to be sent to Avignon; but, as the means of collecting the facts were miserably inadequate, and the terror so widely spread, the result obtained was only proximately correct.

It has, however, been calculated that in the East no less

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

than thirty-seven millions perished of the Black Death. As for Europe, it has been supposed that at least a quarter of the population was carried off, and if this be true twenty-six millions must have died. It is, of course, impossible to hazard even a guess for Africa, and, if the plague extended so far, for America. Even leaving these two continents out of the question, it is positively awful to contemplate a mortality reaching the enormous figure of sixty-three millions; it is almost double the population of the British Islands, so that to form an idea of the terrible penalty we must imagine the whole population of these islands to be swept away twice over. However, whilst giving these estimates it is but just to draw attention to a phrase which occurs in Boccaccio. This writer, who places the mortality at Florence at thirty thousand more than the number we have given, says that "between March and July following it is supposed and made pretty certain that upwards of a hundred thousand souls perished in the city only, *whereas before that calamity it was not supposed to have contained so many inhabitants.*" The uncertainty here noticed must have been general, but even with this element of uncertainty it is fearful, it is awful, to contemplate a mortality of sixty-three millions from one cause alone. Our sorrowful cholera year, 1849, with its death-rate of fifty thousand, and the year 1854, with its twenty thousand, will long be remembered with a thrill of horror, but these numbers fall into the utmost insignificance when compared with the twenty-five per cent. of the Black Death year; indeed, our worst year, 1849, only gives us the number which were consigned to the earth in that one plot of sixteen acres on the Charterhouse-square site.

When so much human misery is in question, it may seem to be descending to mean considerations when we even hint at the pecuniary loss which must have resulted. But in times of such calamities all trade must cease: cessation of trade brings bankruptcy, famine, and death in its train, and when matters begin once more to resume their wonted course, it is found that many prosperous places have fallen never to rise again; trade having been forced into new channels, old mercantile houses perished, and new ones sprung into being.

This Eastern plague—or Black Death—visited Europe again and again; and it always seems to have reaped a plentiful harvest in this country. Its constant recurrence led to the publication of bills of mortality; and, when London had been devastated by it in 1665, and when by a most fortunate conjunction of events the worst plague-spots in the metropolis had been burned to the ground, it led also to increased attention being paid to the demands of the laws of sanitation By a universal law, good is eventually wrought out of evil; we have a bad year of sickness and death, and immediately a hundred remedies are at hand which, in the long run, react on the conditions which produce the disease germs, the human race becomes healthier, the rate of mortality is reduced, and, as a matter of course, the length of man's days is increased. We do not wish to imply that our knowledge of the laws of health is what it should be, or else why cannot we stamp out small-pox, cholera, and other contagious diseases? but that it has improved, and is improving, is shown by the comparative success with which we can occasionally localise an epidemic, as, for instance, cholera, which, though it has returned to the attack on the West again and again, has done so with ever decreasing strength. The great streams of disease have ever flowed from East to West. It behoves us, then, as a great nation—a nation whose centre of gravity lies in the East, though its knowledge is that of the West—to fight manfully up the stream until we arrive at the source from which these terrible scourges of humanity spring—until, in fact, we bring the impracticable East to obey the health-laws discovered in the scientific West. By so doing we shall benefit, not only ourselves, but the whole human race.

Deafness in Schools.—In a recent paper to the Bureau of Education at Washington, Dr. Sexton inquires into the causes of deafness among school-children and its bearing on education. It is unusual, he states, to meet with a child that has not had some ear disease. He divides the causes into (1) local causes and (2) affections of the ear from nervous sympathy. Under the second heading are included cold in the head and dental irritation; the latter a very common source of injury to the ears. Among the many school children brought to the New York Eye and Ear Infirmary for ear affections it is rare to find one case in which the state of the teeth is not to be considered as a factor. Further, the entrance of water into the ears (as in bathing), diphtheria, mumps, close cutting of the hair, are among the causes of ear disorders. Dr. Sexton thinks pupils should be examined at the beginning of each session to ascertain what number are too deaf to receive instruction in the ordinary way, and what number having slight defects would get on better if seated properly in the schoolroom. The best test is the voice of the person with which the children are familiar in learning; various test-sentences should be repeated at about 12 ft. distance, the listening pupil having the eyes closed, and one ear stopped by an assistant. From an examination of 570 pupils it appeared that, though the teachers were only aware of one case of deafness, and the pupils themselves of 19, the author detected 76 cases, or about 13 per cent., of greatly diminished hearing in one or both ears. Of the entire number, 487 were questioned as to previous ear-ache, and 173 recollected having had this symptom. Simple directions are given regarding the treatment of pupils with impaired hearing; those hearing with difficulty should be placed near the teacher, those who hear well only with one ear placed with that ear towards the teacher, &c. Pupils who cannot understand the teacher at 5 ft. should be separated and receive special instruction. Dr. Sexton alludes to the importance of good hearing for teachers, and thinks that persons seeking pedagogic education at the public expense should be subjected at the outset to an aural examination. He also remarks on the discouraging situation of a deaf child, and advises that when no apparent cause for a child's dulness of action is known to exist, a thorough investigation of the acoustic organs should be made before necessarily regarding the child as a dunce or feeble-minded.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

AN ALTERNATIVE TO CREMATION.

By W. Mattieu Williams.

While heartily agreeing with your remarks (page 305) on the necessity of destroying the possibility of any resuscitation of disease germs from buried bodies, I see quite plainly that attempts to introduce any general practice of cremation are utterly visionary. Not one per cent. of the existing population of Great Britain could be *practically* converted * to it by any possible amount of argument or eloquence; and unless a whole family consents, the cremation of any one of its members would be an outrage.

I find by practical experiment that even those who profess to be cremationists are usually self-deluded. They say, "I have no objection to being burned when I die." This is outside of the question. When A or B is dead, he ceases to have any voice in the matter. It is the living relations who require to be consulted. My experiment has been to reply to the above quoted declaration by asking whether the strong-minded person, so willing to be himself cremated, would feel quite at ease in cremating his wife or child, or father or mother. In most cases the response has been something like a shudder, and a little introspection convinces me that in spite of all my chemical reasoning and perfect willingness to have my own body made into candles, or soap, or cyanides, or artificial manures, or dissipated at once in a cremation furnace, I should sicken at the prospect of ordering any such disposal of the remains of any one who had been dear to me during life.

Many years ago—I forget where—I saw a model representing a scheme for sepulture which I think is perfectly practicable, and open to no material objection. It was that a square piece of ground should be laid out into horizontal brickwork compartments, each of the size to hold a coffin. When this stratum was occupied it was to be bricked over to form the floor of another stratum of the like kind, and so on upwards; but each successive stratum was to be smaller than the one below it, so that ultimately a pyramid should be raised. This would constitute a sort of co-operative monument and economise greatly the area of our cemetries, which are now becoming filled up to an alarming extent.

One objection then made to this scheme was that the porosity of the bricks or of stone, which would permit the entrance of air and exit of pestiferous gases. This objection was made before concrete building was invented. By substituting concrete side walls for the brick or stone, there would be no difficulty in effecting an hermetical sealing of the whole contents. If a lapse of time between the completion of one stratum and the covering it with another were made imperative, the possible requirement for disinterment might be fulfilled by starting successively a number of such pyramids in the same cemetery. Metal plates of moderate size might be engraved with inscriptions to the memory of all that were enclosed in each stratum, and these plates, artistically arranged on the outside and glistening in the sun, would give a special architectural character to these pyramids, which, if correctly constructed, would present a pure geometrical figure that is always satisfactory. They would become monuments of considerable interest, each stratum being surrounded by a step-like footpath, forming a promenade from which the inscriptions immediately above could be read. An index to each pyramid could be made to indicate the exact position of each inscription, by stating on which stage, on which face, and on which number in the row, it could be found.

* [We do not agree with our esteemed contributor in respect of this statement.—Ed. H.]

HOW TO EMBALM.

The following formulæ are given as useful for embalming:—

1. *Morell's Antiseptic Liquid* (for general antiseptic and embalming purposes).—Arsenious acid, 14 parts; caustic soda, 7 parts; water, 20 parts; carbolic acid, sufficient to render the fluid, after stirring, opalescent. Then add water enough to make 100 parts.

2. *Müller's Preserving Fluid.*—Bichromate of potassium, 2 to 2½ parts; sulphate of sodium, 1 part; water enough to make 100 parts.

3. *Wickersheimer's Preserving Fluid.*—The original formula of this, which was purchased for general use from the inventor by the Prussian Government, contained ingredients which were partly incompatible. The composition was gradually modified to eliminate this drawback, and it is now generally prepared in accordance with one of the following formulæ, which differ somewhat according as they are to be used for injecting into a body, or for preserving a body immersed in the liquid:—

	For Injecting.	*For Immersing.*
Arsenious acid	16 grammes	12 grammes
Sodium chloride	80 „	60 „
Potassium sulphate	200 „	150 „
„ nitrate	25 „	18 „
„ carbonate	20 „	15 „
Water	10 litres	10 litres
Glycerine	4 „	4 „
Wood naphtha	¾ „	¾ „

4. If the object be not so much to embalm or preserve a whole body, but to preserve animal tissues or anatomical or histological specimens, so that they may be transported or shipped in any climate, and be in good condition for subsequent microscopic examination, the following method, communicated by Prof. Welch, of Bellevue Hospital Medical College, will answer:—"Portions of the organs should be cut into small pieces (on the average cubes about one inch in diameter), and placed for four to eight weeks in in Müller's fluid (potass. bichrom., 2½ parts; sodæ sulphas, 1 part; water, 100). A large quantity of the fluid should be used, and it should be frequently changed for the first week, until it remains clear. After about six weeks the specimens are removed from the Müller's fluid, and for three or four days are thoroughly washed in frequently-changed water, until the water ceases to become yellow, after standing some hours over the specimens. The specimens are then placed either in alcohol, or in alcohol 2 parts, water 1 part, and after a few days are ready for cutting for the microscope. The spinal cord is cut into pieces about ¾ of an inch long, which remain connected by the membranes, and can be hardened in the above manner, but should not, as a rule, remain

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

longer than a month in the fluid. Small pieces can be hardened rapidly in strong alcohol. Here it is necessary to take pieces about ½ inch or ¾ of an inch in diameter, and to use a large quantity of strong alcohol. The chief errors are, not using a sufficiently large quantity of the hardening fluid, or in attempting to harden too large pieces. It is best to use at least a pint (and preferably more) of the Müller's fluid for six or eight of the cubes one inch in diameter, and to change this fluid several times. The specimens should be obtained as freshly as possible from the autopsy. Well-stoppered glass vessels should be used for the hardening. After the specimens are once hardened by the process described, they can be preserved in a small quantity of alcohol, and can be sent packed in cotton-wool soaked in alcohol."

A Little Knowledge.—A candidate at a recent examination for a scholarship under the School Board is reported to have made the following statement concerning the process of digestion: "The food passes through the liver, and evaporates by means of little holes called capillaries." The examiner who published the answers suggests that this novel theory had its origin in the study of some cheap diagram of the digestive system. Knowledge of this kind is indeed a dangerous thing, and worse than conscious ignorance. There is a simple ignorance, and there is a compound ignorance; that is, there are people who are ignorant, and know that they are; and there are people who are ignorant, and think they know. The latter only are a dangerous class.

The Influence of Quinine upon Heat-dissipation and Heat-production.—In a late article by Wood and Reichert, the authors make the statement that quinine increases both heat-production and heat-dissipation, though, on the average, the percentage of increase of heat-dissipation largely exceeds that of heat-production. A desire to test the accuracy of these results has led Arntz to make a similar series of experiments. To measure the relative amount of heat-dissipation from the skin, he made use of a porous wooden cap, lined with felt, which could be applied to any part of the body. The temperature within the space thus enclosed was registered by a delicate thermometer. Any increase in the loss of heat through the skin would be shown, therefore, by the thermometer. Experiments were made upon men and rabbits in a normal healthy condition, the general results of which show that no increase in heat-dissipation follows the injection of quinine. To explain the contradiction existing between his own and Wood's results, he supposes that the doses used by the latter were too large for the animal (dog) experimented upon; and the increase in heat-dissipation was probably owing to the animal's struggles and attempts to vomit. Two experiments that he made upon dogs, using the same dose as that given by Wood, tend to support this explanation. To determine the effect of quinine upon heat-production, observations were made upon normal rabbits, and rabbits suffering from septic fever, the amount of oxygen absorbed being taken as an indication of the oxidations going on in the body. In normal rabbits, quinine was found to have no effect upon the amount of oxygen consumed; while, in animals suffering from fever, it caused a diminution in the oxygen consumption. The author's conclusion, with regard to the action of quinine against fever-conditions, is, that it acts in the first place indirectly, by destroying the organisms which give rise to the fever, and, in the second place directly diminishes the oxidations in the tissues of the body.—*Pflügers Archiv.*

Our Papers on Popular Science.

FOURTH PAPER.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

AIR.—II.

By Edward H. Riches, LL.D., F.R.A.S.

We remarked at the close of our last paper that what was understood by real ventilation should be a getting rid of all vitiated air and a replacing it by fresh air, or, in other words, what is required is a continual change of air. This continual change of air in our rooms is absolutely necessary for the sustaining of our health, and also that combustion may be supported in the case of candles and fires so essential to our use. That the blood may be purified and life supported, the lungs must be supplied with a certain amount of oxygen (this oxygen being at once brought within our reach by the renewal of fresh air), which is to take the place of the carbonic acid thrown off from the lungs in the process of expiration, which charges the air after we have used it for breathing.

It may be remembered, too, that all exhalations harmful to health are carried off by a free ingress of air into our rooms, and we can at once see how this entrance of fresh air into our rooms effects this, because air which has been vitiated by noxious gases is not so heavy as the fresher air (which is colder and denser), and is therefore forced upwards, and floats above the purer current of air, and if there are any means of escape for this poisoned air at the top of the room it is naturally forced to escape by the pressure of purer air below. Many and various systems of apparently perfect ventilation have been suggested, but it is quite certain that the system which is best calculated to bring into an apartment fresh air lower down (*without causing draughts*, which in themselves are always injurious to health), and permit of an escape of bad air high up, is the one to be aimed at. There are many natural ways afforded us for ventilating a room without having recourse to an arranged system of ventilation; for instance, if there be an open fire-place in a room we have at once a partial system of ventilation ready at hand; but, to assist, there should be some kind of opening somewhere high up in the room as well. We mentioned above that ventilation in a room was necessary in order that, in the case of a candle or fire, combustion may be supported, and what was meant was this, that, without some ventilation, whereby a fresh supply of oxygen be infused into the air, neither the candle nor the fire could be kept alight, owing to there not being sufficient oxygen for either to feed on. It has been ascertained that the burning of one pound weight of coal consumes as much oxygen as is contained in 155 cubic feet of air, and it may be noted that 100 parts of air contain 20 parts of oxygen, so that one pound weight of coal, during combustion absorbs 31 cubic feet of *oxygen*.

Of course, even when the windows and doors of a room are closed, a certain amount of fresh air will force its way through the crevices of doors and window-frames, and if there be a fire in the room, the vitiated air to a certain extent will escape up the chimney; but if there be no fire in the room it will find its way out of any little crevices at the top of doors, or out at any little aperture high up in the room, which may happen to exist. It is easy to see the reason why the opportunity of admitting fresh air into

a room should proceed from below rather than high up, when we remember that the vitiated air being lighter than the fresher air it rises up, thus forming a vacuum to a certain extent, and the easier escape it may have the greater the vacuum will be which is thus caused, and fresh air will the more readily force its way in, lower down.

It is by bearing in mind the simple principles enumerated in this and in the other papers of this series that the nature of many of the laws relating to health may be the more readily understood and heeded. As it is not our intention to teach any portion of that wide-reaching word, "science," in a technical sense, by means of what may be here popularly expressed, we shall not hesitate to mention, however briefly, even what may at a glance appear to be almost trivial, provided it have a bearing on our object.

It may be imagined that the ventilation of mines is a matter of considerable importance; that as perfect a system as possible may be brought into vogue, whereby pure air may be introduced and vitiated air expelled. In most mines there are two flues or shafts, and they are so arranged that the pure air which is forced down one is enabled to traverse the whole extent of the mine before it can escape by the second of the two flues. And it is not a difficult matter to arrange this, for the air is rarefied or expanded within one of these shafts or flues by keeping up a large fire in it; thus an ascending current is formed, which carries with it all the vitiated air and noxious gases. For a fire to burn freely in a room it is necessary that the chimney and stove should be of such construction that the necessary quantity of air may be drawn through the burning coal, for, without this, combustion would not be rapid enough to be maintained. To produce the necessary current of air we must see that the draught in the chimney is as it ought to be, though, of course, as the air in the chimney is heated it is lighter, and has a tendency to rise; and, if nothing abnormal exists to prevent this rising of the heated air, the air in the room will rush through the grate, and also through the space above the fire and the bottom of the chimney. If the bottom of the grate be a solid, instead of—as is more commonly the case—its being made of a series of parallel iron rods, the air which is attracted through the burning fuel by means of the front of the grate is quite sufficient to keep up combustion, although the draft of air created is not, under certain conditions, so great.

In the case, too, of a solid bottom to a grate a fire will last all the longer, as combustion goes on at a slower rate, less fuel is consequently consumed, and, from personal experience, we may assert that a more economical consumption of coal is created; and, provided the construction of the room and chimney permit of sufficient draught, a more uniform amount of heat from the fire is thus secured. Of course, if the draught be bad, the rarefied air passes very tardily up the chimney, and the fresh air from the room flows with equal sluggishness towards the fire to supply it with oxygen. And it may be noted that the more quickly the heated air passes up the chimney the more quickly will colder air from the room rush towards the fire; and we may remember that the longer the flue the greater the draught. And so it will be at once seen that, provided there be sufficient means for the ingress of fresh air to a room, a burning fire will at all times be a valuable force for the escape of vitiated air, and a continual inducement, so to speak, for fresh air to enter the room.

The luminous property of the flame of a candle depends upon the supply of oxygen from the air with which the vapour within the flame must come into contact before it burns; and this vapour within the flame arises from the melted tallow which is drawn up the wick, by what is called capillary attraction, and is boiled and converted into vapour by the heat of the burning flame. The more oxygen that can be admitted into the burning flame, the brighter the flame will burn. In the construction of the Argand burner, which renders a hollow tubular flame, the oxygen of the air is at once admitted freely into the burning flame, which is rendered thus bright and clear. It may be remembered that in keeping the ventilation of a room as perfect as possible, it will always be necessary to observe that a correct *temperature* of the same be maintained; and, with a free ventilation, the most healthy temperature in ordinary cases will be 65° Fahr. A free ventilation must be insisted on, that is, opportunities for the ingress of fresh air and the egress of foul air; for, though the fire in the room, as has been shown, may be a ventilation to a great extent, it must be remembered that the air which passes up the chimney passes first by one on a level with the mouth, and the pestilential air is inhaled as it rushes past towards the fire, and so up the chimney. In our next paper we shall deal with evaporation and steam; and it will be seen that in these matters, too, there will be considerations well worthy of notice in connection with physical health and well-being.

Open Spaces and the Rights of the Public.—It is well, for the public and their rights to open spaces, that the encroachments of railways and other spoiling agencies have, in the case of all the larger projected schemes, to be sanctioned by Parliament before they can be carried out. And all lovers of good scenery and healthful exercise must have thanked the powers that be for the timely assistance which they afforded the public during the last session of Parliament in preventing the encroachments of railways in the lake district of Cumberland and in Epping Forest. The Metropolitan Public Garden, Boulevard, and Playground Association are doing good work in rescuing various small sites in London from that swallowing-up of "unconsidered trifles," for which that body has come into existence, Lord Brabazon being its present chairman. But it is not only in the above-mentioned notable instances that the rights of the public are being continually threatened with extinction. The lords of the manors are, in various parts of the country, frequently found to be endeavouring to restrict the access of the commoners and others to the open spaces over which they would claim more extensive powers. One of the most recent cases of this encroachment is that which the lord of the manor has been recently endeavouring to carry out at Ilkley Moor, near Ben Rhydding Hydropathic Establishment, Yorkshire. Dr. J. F. Little, the medical superintendent of the establishment, has, in the interest of his patients and the public, disregarded the notices which have been posted on the Moor, intimating that "trespassers will be prosecuted; by order." And all who value the highly health-giving character of these public open spaces will appreciate aright the action which he has taken in the matter, and will wish him success in the undertaking. It appears that the rights of the public to roam at will over the Moor for a period far beyond the memory of the oldest inhabitant are well established, and these liberties should be vigilantly guarded.

Perfect Daylight.—Chappuis' reflectors supersede gas in daytime and improve natural daylight. They can be adapted to any window, fanlight, skylight, area light, &c., wherever natural light is impeded owing to the bad construction of premises or the proximity of walls or buildings. They will be found to promote health, comfort, and economy. They can also be used as screens or blinds, and at the same time they act as daylight diffusers. More than 30,000 are in use in London alone. For prospectuses address two stamps to (H.) Chappuis, patentee and manufacturer, 69, Fleet-street.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE HEATING OF HOUSES.

By Dr. A. W. Bell.

(From the *North American Review.*)

SECOND PAPER.—STEAM-HEATING, &c.

All flues for the exit of foul air should be perfectly smooth and tight. Rough surfaces not only retard but retain emanations which come in contact with them. Moreover, exhaust-flues should never be placed in outer cold walls, because the greater density of the outer cold air prevents the ready ascent of the warmed and rarefied air from within. Another important consideration is the size of air-shafts. This can only be approximate, however, because the amount of air which will pass through a shaft depends in a great degree upon the relative temperatures of the inner and outer atmospheres, and the conditions of the weather, particularly the direction of the wind. As a practical average, the best observers recommend that the sectional area of both inlet and outlet shafts be 24 square inches per head; or, for buildings of three stories, one square inch for every 50 cubic feet of space; rooms below, one square inch for every 55 cubic feet; for ground floors, one square inch for every 60 cubic feet. It should be borne in mind that the friction in long flues considerably lessens the extractive power, and that the column of air in the flue increases in density as it ascends. In prisons, where the cubic space per head is comparatively small, the sectional area of the air-shafts should be at least 20 square inches per head.

Open fire-stoves combine the advantages of the open fireplace and the close stove, provide for fresh air, and economise heat. The important improvements in stoves of this kind have not only well-nigh supplanted the open fire-grate in supplying all that was ever claimed for it, but excel it in all the requisites of economy and comfort.

Hot-air furnaces are simply enclosed stoves placed outside the apartments to be warmed, and usually in cellars or basements of the buildings in which they are used. The manner of warming is virtually the same as by indirect steam-heat—by the passage of air over the surface of the heated furnace or steam-heated pipes, as the case may be, through flues or pipes provided with registers. The most essential condition of satisfactory warming by a hot-air furnace is a good chimney-draught, which should always be stronger than that of the hot-air pipes through which the warmed air is conveyed into the rooms, and this can be measured by the force with which it passes through the registers. A chimney-draught thus regulated effectively removes all emanations; for, if the chimney-draught exceeds that of the hot-air pipes, all the gaseous emanations from the inside of the furnace, and if it have crevices, or is of cast-iron and over-heated, all around it on the outside will be drawn into the chimney. Closely connected with this requirement for the chimney-draught is the regulating apparatus for governing the combustion of fuel—the draught of the furnace. This should all be below the grate; there should be no dampers in the smoke-pipe or chimney, and all joints below and about the grate should be air-tight. The fire-pot should be lined with brick and entirely within the surface, but separate from it, so that the fresh air to be warmed cannot come in contact with the fuel-chamber.

It should go without saying that the air which passes from furnaces into living-rooms should always be taken from out of doors, and be conveyed in perfectly clean air-tight shafts to and around the base of the furnace. Preferably, the inlet of the shaft, or cold-air box, should be carried down and curved at a level (of its upper surface) with the bottom, and full width of the furnace. Thus applied, the air is equally distributed for warming and ascent through the hot-air pipes to the apartments to be warmed. On the outside the cold-air shaft should be turned up several feet from the surface of the ground, and its mouth protected from dust by an air-strainer. A simple but effectual way is to cover the mouth with wire cloth, and over this to lay a piece of loose cotton wadding. This may be kept in place with a weight made of a few crossings of heavy wire, and it should be changed every few months. And here, too, outside the house, should be placed the diaphragm for regulating the amount of cold-air supply, and not, as commonly, in the cellar.

As the best means of regulating the temperature and purity of the atmosphere from hot-air furnaces, it is necessary to provide sufficiently large channels for both the inlet of fresh air and its distribution through the hot-air pipes. The area of the smallest part of the inlet (or inlets, for it is sometimes better to have more than one) should be about one-sixth of a square foot for every pound of coal estimated to be burnt hourly in cold weather; and to prevent, in a measure, the inconvenience of one hot-air pipe drawing from another, the collective area of the hot-air pipes should not be more than one-sixth greater than the area of the cold-air inlet. These proportions will admit the hot air at a temperature of about 120° when at zero outside, and the velocity through the register will not exceed 5 ft. per second.

A large heating surface of the furnace is a well-recognised condition of both economy and efficiency. As a rule, there should be ten square feet of heating surface to every pound of coal consumed per hour, when in active combustion; and the grate area should be about one-fiftieth of that of the heating-surface. For the deficiency of heat, or the failure of some of the hot-air pipes of hot-air furnaces in certain winds and weathers in large houses or specially exposed rooms, the best addendum is an open fire-grate. With this provision in northerly rooms, to be used occasionally, hot-air furnaces may be made to produce all the advantages of steam-heat in even the largest dwelling-houses.

Steam-heat may well be compared with stove and furnace heat. Stove-heat corresponds to direct radiation by steam, and furnace-heat to indirect. The supply of fresh air from the outside to and over the hot-air furnace, and through hot-air flues into the rooms through registers, is virtually the same as when it is conveyed by means of steam-heated flues in the walls. Exhaust-flues, for getting rid of foul air, are equally essential. The stove, as representing direct radiation in the same manner as the steam coil, or plate, in the room, has the advantage over the latter of some exhaust of foul air, however little, even when the smoke-pipe is not jacketed, for the steam-heat has none. In comparison with open-stove heat, steam-heat is at still greater disadvantage; for open stoves supply all the qualities of complete radiation—the introduction of

A Valuable Invention.—It is gratifying to learn that Mr. R. Adams, of 17, Blackman-street, London, S.E., whose fanlight-openers and silent door-springs are being extensively used, has received large orders for his Patent Reversible Window. The sashes, although they slide up and down in the usual way, can be instantly turned inside out, enabling anyone to clean each side of the glass with ease, while standing in the room.—[Advt.]

fresh air and the escape of foul—to a degree wholly unattainable by steam-heat, whether direct or indirect, or by hot-air furnaces, which always require special provision for the escape of foul hair.

The advantage of stove and furnace heat over steam may be summed up thus: It is more economical, more uniform, more easy of management, more suitable for small areas to be warmed, and is free from the noises and dangers of steam. Irregularities of the fire in steam-heating are a constant source of inconvenience, and sometimes of danger. The going down of the fire during the night-time, or its neglect for a few hours at any time, is followed by condensation of the steam. On the addition of fuel and increase of heat, steam again flows quickly into the pipes where a partial vacuum has formed, and here, on coming in contact with the condensed water, it drives the water violently, and creates such shocks as sometimes occasion explosions; or, at least, produces very disagreeable noises and general uneasiness, and frequently causes cracks and leaks. Hence direct steam-heat, which for warming purposes alone is altogether superior to indirect, has been well-nigh abandoned. Indirect steam-heat places the leaks out of sight, but they commonly lead to mischief, and require special and expensive provision for access and repair.

TRICHINOSIS.

At a recent meeting of the French Academy of Medicine, M. Brouardel read a paper relative to the recent trichinosis epidemic at Emersleben, in Germany, he having been detailed by the government to investigate the occurrence. He stated that the cause of the disease was traced to the flesh of a hog which had been chopped fine, and of which a large number of people had partaken, spreading it upon bread as if it were cheese. Between September 12 and 19, 250 persons were taken ill, of whom 42 died; in the neighbouring village of Deesdorf 42 were affected, of whom 9 died. On September 19, the rest of the chopped meat, having remained unsold, the butcher mixed it with a fresh lot and sold it at the town of Nieubagen; here 80 persons were attacked, though less seriously than the former, and none died.

At the beginning, the nature of the disease was misunderstood, it being considered as a diarrhœal cholera, either of spontaneous origin or due to the poisoning of sausages. The true cause of the disease was recognised only at the eleventh hour. M. Brouardel set out to determine whether the time intervening between the killing of the hog and the consumption of the meat had any influence upon the virulence of the disease and the time of its appearance. He found that the noxious qualities of meat containing trichinæ diminished according to the ratio mentioned. Those who partook of the meat six days after the killing were still sick, but none died; whereas in the case of those who ate it the day following, fatal symptoms were rapidly developed.

The main question of danger from trichinosis lies in the preparation of the meat. Every one of the victims had eaten it *absolutely raw*. A single family that had cooked the meat in the shape of sausage, on Sept. 15, showed not the slightest indications of disease. It showed that the affected meat was rendered harmless by cooking to a degree even which might at first have been considered entirely insufficient. Another mode of prevention consisted in giving the consumers of the suspected meat a certain dose of alcohol, and the favourable action noted by the attending physicians is ascribed to its influence.

He remarked, in conclusion, that, in view of the German habit of eating meat raw, there was some justification in prohibiting the importation of American pork into Germany; but, as regards France, where such habits do not exist, he doubted the advisability of the preventive measures to exclude American pork.

Notepaper can be perfumed by first saturating blotting-paper with the perfume and allowing it to dry, and then placing the writing-paper between the sheets and subjecting to pressure for a few hours. The blotting-paper can be used over again if not exposed to the air.

Children fed on the food of their seniors, or rich cake and crammed with sweeties, do not as a rule thrive well. They cannot compare favourably with children fed on oatmeal, or maize and milk. Oatmeal is recovering its position as a nursery food, after its temporary banishment. Oatmeal porridge is the food *par excellence* of the infants born north the Trent, or was, at least; and stalwart people were the results. Carlyle said of Macaulay: "Well, any one can see that you are an honest good sort of a fellow made out of oatmeal." A Perthshire ploughman on being asked his opinion about foods, said he had never eaten anything else than porridge and milk for five and thirty years, and did not think he could fancy anything else. He evidently was not satiated with porridge, nor felt his dietary monotonous, nor tired of its sameness.

The Electric Light in Houses.—A paper was read on the evening of the 18th, at the ordinary meeting of the Royal Institute of British Architects, on the "Electric Lighting of Houses, and the precautions to be adopted on its introduction," by Mr. Killingworth Hedges, C.E. The steady increase of electric lighting for house purposes was shown by the number of installations which have recently been made by the occupants of houses both in town and country. In large cities, a temporary check had been experienced with the general supply of electricity, as contemplated by the Act of 1882. This was partly because the companies who obtained provisional orders were of too speculative a character, and also because the stringent regulations of the Board of Trade prevented the introduction of capital. The electrical currents which would be employed for lighting a dwelling are far more powerful than those now used for telephones and for electric bells; and, without some precautions were taken to insure their being properly regulated, they might cause great risk from fire. Mr. Hedges pointed out how this risk might be occasioned, and suggested that the rules of the Fire Risk Committee should be strictly adhered to, especially those which advised that all work should be under the supervision of a competent electrician. Many fires had been caused by the electric light, which is used largely in America for mill-lighting. The official report showed that all these were either due to neglect of precautions for safety, or by not having the work properly supervised. As regards cost, the fixed charges with electric-lighting, such as interest, &c., caused it to be much dearer than gas, when used for a short period, but, if these charges were spread over a number of hours, electricity was relatively much cheaper. In a country house the expense would not be more than for gas, even if it was dearer, Mr. Hedges recommended the introduction of the electric light on account of the ultimate saving in the renewal of decorations and preservation of works of art. The property of not vitiating the air should alone make electricity rank, independent of its cost, as one of the greatest *sanitary improvements* of the age. The paper was followed by a discussion.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

FOURTH PAPER.

These movements seem simple enough on paper, but if any reader doubts their difficulty let him perform them but once. He will then undoubtedly become convinced that they are necessary to be learned before he can hope to walk gracefully and without inconvenience to himself. All these exercises should be varied; that is, the pupil should not be kept too long at any one, but when his interest flags or he feels tired of it some other exercise should be performed.

Thus, suppose the lesson to last an hour, that would be too long to keep at the balance step, but that step and the following exercise could be performed alternately during the hour's lesson. Much harm has frequently been done to a pupil's constitution by him performing exercises for which he has not had special training; thus, to expect an untrained pupil to go through the club exercise or perform on the bar before he has obtained command over the movements of his shoulders, body, and legs, is to render him liable to sprains, dislocations, or even ruptures. The following exercise, therefore, is a preparatory one to enable him to strengthen his breathing powers while moving the arms about, and also to get a freedom over the joints. The pupils will stand at "attention," then on the word "Number,"* the right hand one will call out "one," the next on his left "two," and so on to the extreme left; then, on the command "Even numbers two paces to the rear," numbers two, four, six, &c., will take two steps backwards, and remain steady. In stepping off either to the front or backwards, always step off with the left foot.

On the command "Prepare for exercise," the pupils will raise their arms level with their shoulders, clench their fists (not too tight), and remain steady with their arms thus extended in front of them. On the word "Commence," each pupil individually will swing his arms up and backwards half-a-dozen times in succession.

On the word "Reverse," the pupils swing the arms downwards and round in the reverse direction to the former. At each swing of the arms as they are raised, lean slightly forward and raise yourselves on the toes, sinking on to the heels again as the arms go downwards. Now, several things are to be obtained by this exercise. The arms do not go round in a complete circle, otherwise the wrists would strike each other; but the arms are swung round diagonally to the body. Be careful not to carry them too far backwards until you are well used to the exercise, else the muscles of the chest are liable to be strained or the shoulder-blades pained. Breathe full into the chest, and throw it forward during the exercise, setting the shoulders as square back as possible, without being too severe with them. If the movement is done slowly and closely analysed, it will be seen that the arms rise up straight from the shoulders by the side of the head, and then drop down until each arm and shoulder form one straight line, and then the arms are brought round in nearly a horizontal position to the front again. In the "Reverse" the positions are the same, but reversed in order.

This exercise strengthens the chest and allows the heart to regulate its pulsations preparatory to more violent exercise. In all cases regularity of breathing should be attained—that is, the breathing should be regular, in no way forced—and the best way to attain this is not to think at all about the heart and its work, for directly you do you find it playing all sorts of tricks with you, either beating slower, irregular, causing you to feel as if you must gape, gasp for breath, or open your mouth for more air. The breath should be drawn in through the nostrils, and to ensure this being done without any exertion, strive to draw it through the nose. It is best to call out or speak while doing such exertions as just described; thus, each time the arm is swung round shout out one, two, three, &c.; you will thus draw in your breath without thinking of it. Many an athlete and gymnast has injured himself and sown the seeds of consumption by allowing violent exercise to interfere with the regularity of breathing. This is frequently the case when he is in a state of mental excitement, through allowing *hope* or *fear* for the result of the race to interfere with his sole thought or determination, *i.e.*, that of winning the competition he is engaged in. In severe competitive exercises more harm than good is frequently done. In all exercise you want to feel enthusiasm for it, but you must not worry your brain by trying to perform better than your left or right hand neighbour. Your mind should be entirely free from all thought, and the attention concentrated on the directions given by the instructor for the performance of each exercise. If a trapezist or a rope-walker allowed his thoughts to wander for an instant to other affairs than the performance he is doing, he would at once lose his "presence of mind," with the result, perhaps, of falling and breaking his neck. If in the above exercise of swinging round the arms a sharp pain, like the prick of a knife, or a giddiness be experienced, cease the performance at once; and, when next attempted, proceed slowly and regularly, and, if the pain continues, it will soon vanish by inflating the chest with air several times.

* In all exercises it is best to have some sort of precision in giving the words of command and the order of the exercises, since more good results from systematic instruction than from any sort of confused play.

Poisonous Properties of Edible Fungi.—It is well known that among the mushroom tribe there are some which, even when cooked, are dangerously poisonous, while others may be eaten without harm. That the latter, however, contain a poisonous principle seems to be proved by experiments recently made by M. Dupetit. He injected under the skin of some animals fresh juice from the edible fungus *Boletus edulis*, in a dose of two cubic centimètres to 100 grammes weight of the animal. This was followed by symptoms of poisoning and by death, the latter in three to six hours in the case of the rabbit, and a longer time in those of the guinea-pig and rat. Similar effects were had from other fungi, supposed non-poisonous, *e.g.*, *Amanita cæsarea*, *Amanita vaginata*, *Amanita rubescens*, and *Agarious campestris*. The juice of the cultivated agaric seemed less active. It is a curious fact that *Amanita rubescens* alone, among the species of fungus experimented with, proved poisonous to frogs when the juice was injected. The juices of those fungi may be introduced in large doses, and, in the fresh state, into the alimentary canal of guinea-pigs with impunity. Moreover, *Amanita rubescens*, considered always poisonous in the raw state, produced no apparent injury to dogs which swallowed it raw. The chemical properties of the active principle recall those of soluble ferments, and not those of known alkaloids. Submitted to a temperature of 100° C. the juice always becomes quite innocuous. Thus there is no risk attaching to edible fungi when cooked.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Voice, Song, and Speech. A Practical Guide for Singers and Speakers, from the Combined View of Vocal Surgeon and Voice-trainer. By Lennox Browne, F.R.C.S.E., and Emil Behnke. (London: Sampson Low, Marston, Searle, & Rivington.) 1883.

The discovery in 1855 by Signor Manuel Garcia of the principle of laryngoscopy, or the method of examining the organ of voice in the living body, gave an immense impulse to the study of vocal physiology. Since that year many works have been written and published on this interesting subject. Some of these have been of considerable merit; others have sunk into a kindly oblivion from which it may be well not to rescue them. With the exception of the work of Dr. Gordon Holmes none have appeared to which reference could be made as a really standard book on the subject with which it professed to deal. The reason for this is not far to seek. There are few medical men, even among our throat specialists, who can pretend to a thorough knowledge of what the voice-trainer must know; and, on the other hand, the voice-trainer has not that intimate acquaintance with the organs requisite to the production of voice and their relations to other parts of the body which the doctor, or at least the throat specialist, must have. Thus it has happened that some of our best singing manuals have taught strange physiological errors, the evils of which are readily apparent to the specialist, while the medical author has committed himself to statements, the absurdities of which must have made himself and his brethren appear ridiculous in the eyes of the voice-trainer; or, falling into the other extreme, he has introduced debatable matters concerning disease which cannot have been to the benefit of the general reader. His exceptional knowledge of medicine, of music, and of the laws governing the production of voice, enabled Dr. Holmes to produce a work free from such blemishes, and of value to the student, the singer, and the speaker. But even his little volume is, to our thinking, somewhat unequal. In discussing those matters that come more particularly into the province of the voice-trainer, he fails to render himself as intelligible as in other parts of the book. When it was announced some months ago that a work on voice, song, and speech would appear as the joint production of Mr. Lennox Browne, the well-known surgeon to the Central London Throat and Ear Hospital, and Mr. Emil Behnke, lecturer on vocal physiology and teacher of singing, we felt that the idea of combined authorship was a good one, enabling the writers to produce a book free from the defects we have mentioned. Now that the work has appeared, we have no hesitation in declaring it superior to any of its predecessors; but having said so, we must not be understood to mean that that it is free from blemish. We have not read the more purely medical portion without experiencing a slight feeling of disappointment and even irritation, not because of errors in fact, but because of certain defects in clearness of style, and also because of the liberties that the author has taken with venerable names in his unsuccessful attempts to modernise them, a fault into which Dr. Gordon Holmes had the good taste not to fall. The work opens with a plea for vocal physiology. It is to be regretted that at this late period of the nineteenth century there still remain people who deny that a knowledge of this subject is of value to the singer or speaker, and whose arguments against it have to be seriously met. A man set to use an instrument, with the mechanism of which he is unacquainted, will be very apt to injure it before long. He may even injure it irreparably. Such an accident may not be productive of much harm, as he may readily be supplied with another, but as our authors remark, "the vocalist has to form his voice, and if he wrongly use it, it may be gone for ever." To the voice-trainer, a knowledge of vocal physiology is absolutely indispensable, else his faulty directions with regard to breathing, to singing, and articulating may be the ruin of his pupil's voice. It is therefore necessary for any one who wishes to attain success as a singer or a speaker that he should receive his training from one who is competent to teach. A great singer does not make a good teacher because of his or her power or sweetness in song; but rather because of the knowledge possessed of the uses and functions of the organs concerned in the production of voice. Some of our operatic favourites are guilty of habits which would be the destruction of another's voice. These are readily imitated by the ignorant and unwary; but as readily avoided by anyone possessed of that knowledge which enables him to recognise the error. He who would teach others must, therefore, not only have a thorough knowledge of music, but also intimate acquaintance with acoustics and the laws of sound bearing on the production of voice. He must have studied the anatomy and functions of the organs of breathing—*i.e.*, of the lungs, of the chest-wall and abdominal muscles, of the wind-pipe, of the larynx or voice-box in which sound is generated, of the various parts of the throat, mouth, and nose which modify sound by acting as a resonance apparatus, and of the tongue, lips, teeth, &c., which form the articulating instrument. Not only must he have "read them up," but he must, in order to possess a thorough knowledge, have examined them in the dead body by dissection, and in the living body by the different methods of examination—such as laryngoscopy—at his command. We do not wish to be understood as saying that such a course of study is necessary to one who merely wishes to receive training; but we do maintain, with Mr. Browne and Mr. Behnke, that it is necessary for those who wish to give training and to correct faults into which pupils are apt to fall. We saw it stated recently in a weekly journal that the laryngoscope did not aid *the student of voice production* (the italics are ours). We hold, on the contrary, that it does, and we think the truth of our assertion will be apparent to any one who examines the drawings of the laryngoscopic appearances in the different registers, so well depicted in the section on "Teachings of the Laryngoscope" in Mr. Browne and Mr. Behnke's work. Following out the plan of study we have indicated, our authors first discuss the acoustics of the voice, after which they pass to consider the anatomy and physiology of the vocal organs. The section on the chest and thorax is admirably clear, the functions of the ribs, chest muscles, and diaphragm are explained. The mechanism of inspiration and expiration is shown to depend on the elasticity of the lungs and the activity of the muscles. It is shown that there are three different modes of inspiring or drawing air into the lungs. These are commonly known as the *abdominal*, the *costa* or *lateral*, and the *collar-bone* breathing. The first is produced by the descent of that large muscle which separates the cavity of the abdomen from that of the chest, the muscle known as the midriff, the diaphragm, or the caul above the liver. By its descent the abdominal organs are pushed down out of the way, the chest begins to expand at its lower part, this expansion gradually extending upwards. The shoulders remain unmoved. In the second mode, the ribs move out to the side, the lungs following them expand, and air rushes in.

The third method is accomplished by raising the shoulders. Only the upper parts of the lung are inflated by this method which is later on in the work condemned as unscientific, unphysiological, and tending sometimes to light up disease. It should only be used when a deep or forced inspiration has to be taken, as in the case of an asthmatic. The abdominal breathing is best witnessed in men, the costal or lateral in women; but both methods usually occur together, more particularly in taking a full, deep inspiration. A curious anecdote is told as illustrating the difference of breathing between men and women. "Some time ago a troupe of 'female minstrels,' calling themselves 'the American Amazons,' made a tour in this country. Their faces were blackened in the orthodox fashion, and they were in male attire, wearing tight-fitting garments of a peculiar kind. Two friends, both medical men, went to hear them (or perhaps to see them, I am not sure which), when Mr. A. remarked that two of the performers were men. Mr. B. did not see it, even when the individuals were pointed out to him, and asked his friend for the reason for his opinion. 'Why,' said Mr. A., 'I see it by their abdominal breathing.' And, sure enough, Mr. B. now saw it too, and there was no mistake about it; for in the two suspected individuals the abdomen was evidently moving in respiration, while in all the others no movement was perceptible excepting that of their chests."

(*To be concluded.*)

"Children's Parties in Winter."—Dr. Cullimore, of the North-West London Hospital, has written to the *Evening Standard* what we conceive to be a very sensible letter, pointing out the perils which beset children's parties in winter. The subject is one which may well receive the thoughtful attention of parents and all who are solicitous for the welfare of the young. Dr. Cullimore's principal objections, which are based on physical grounds chiefly, are urged for the benefit of children under seven years of age. We would extend the prohibition to twelve, or even a little later. It is impossible not to recognise that the so-called "pleasure" of a children's party involves a very large measure of excitement, both before and after the event; so that, apart from the exposure to the chances of "chill" and improper food and drink on the occasion, there is an amount of wear and tear and waste attending these parties which ought to be estimated, and the estimate can scarcely be a low one. It may seem ungracious to strive to put a limit on the pleasures of the young, but it must not be forgotten that early youth is the period of growth and development, and that anything and everything that causes special waste of organised material without a compensatory stimulus to nutrition ought to be avoided. Dr. Cullimore has dealt with the general effects on health, and he has not exaggerated the evils that sometimes ensue, and are always likely to be entailed by this form of juvenile amusement. We turn from these to the mental and nerve injuries inflicted on the growing organism. They are certainly not to be disregarded. A perfect storm of excitement rages in the little brain from the moment the invitation has been received, and the affair is talked about in the nursery until after the evening. Sleep is disturbed by dreams, or, in some cases, prevented by thinking of the occasion, and afterwards the excitement does not subside until days have elapsed, perhaps, not before another invitation is received. Not only in winter, but at all seasons, we think the amusements of young children ought to be simple, unexciting, and as free as possible from the characteristics of the "pleasures" of late years. As a matter of fact, "children's parties" are in no way necessary to the happiness of child life.—*Lancet.*

International Health Exhibition.

LONDON, 1884.

PART SECOND.

REGULATIONS (*continued*).

23. Exhibitors will be required to provide all necessary attendance, and to keep their stands and exhibits properly cleaned and n good order during the whole period of the Exhibition.

24. No exhibitor will be allowed to transfer any allotment, or to allow any other than his own duly-admitted exhibits to be placed thereon, except by permission of the Executive Council.

25. All goods exhibited must be in the name of the person who signed the application form.

26. Exhibitors are requested to mark the selling price of the articles exhibited, so as to facilitate the judgment of the Jury, as well as for the information of visitors.

27. Objects cannot be taken away before the close of the Exhibition without the special permission in writing of the Executive Council. Special arrangements will be made with regard to perishable exhibits.

28. As refreshments come within the scope and classification of this Exhibition, all methods of preparing the same, whether by cookery or otherwise, and the display and sale thereof, will be matters of separate arrangement with those wishing to be represented in this section of the Exhibition.

29. Exhibitors of apparatus requiring the use of water, gas, or steam are requested to make application to the Secretary for a special form, which has been prepared for this section of the Exhibition.

30. All stoves, grates, &c., must be arranged with a view to the abatement of smoke.

31. All fumigating and explosive substances, and all dangerous substances, are absolutely forbidden to be sent.

32. Spirits, alcohol, oils, essences, corrosive substances, and generally all substances which might spoil other articles or inconvenience the public, can only be received in solid and suitable vessels of small size.

33. The Executive Council reserve the sole right of compiling a catalogue of the exhibits under regulations which will be duly notified. Each nation will, however, have the right to produce, at its own expense, a catalogue of all the objects in its own section.

34. The Executive Council reserve to themselves the right of causing any of the exhibits to be examined, tested, or analysed for such use as they may think fit.

35. No article exhibited may be photographed, drawn, copied, or reproduced in any manner whatsoever, without the special sanction of the Exhibitor and of the Executive Council.

36. The Executive Council will not hold themselves responsible for loss or damage occurring to any exhibit from any cause whatsoever; but while declining any responsibility, it is the intention of the Council to take such precautions as they deem necessary.

37. No goods can be sent in previous to the 15th March without special permission; after the 15th April no goods will be received.

38. The right to add to, alter, amend, or expunge any of these Rules is reserved by the Executive Council.

39. Both Englishmen and Foreigners in becoming Exhibitors declare by so doing their compliance with the whole of these Regulations, together with such other Regulations as the Executive Council may issue from time to time.

40. The Executive Council reserve the right to remove the objects belonging to any Exhibitor who may not conform to the Regulations.

41. If any damage or injury shall be caused or occasioned during the Exhibition by any exhibited machine, implement, or article to any visitor or other person, or to any officer, servant, or others then and there employed by the Executive Council of the International Health Exhibition, 1884, then the Exhibitor to whom such machinery, implement, or article may belong shall indemnify and hold harmless the said Council from and against all actions, suits, expenses, and claims on account or in respect of any such damage or injury which may be so caused or occasioned.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists. —[Advt.]

Sanitary Appliances, Etc.

KREOCHYLE LIQUID MEAT.

This is a highly concentrated form of liquid food containing albuminous or nitrogenous compounds in very high proportions, and well adapted as a form of nutriment to be given in cases of emergency, of collapse, or of wasting disease of any kind. Requiring no preparation whatever, "Kreochyle" possesses the immense advantage of being always ready for use. Its taste is extremely pleasant, and the effects of administration are speedily observable in cases in which all other forms of nourishment may have been rejected. One most beneficial property—that of rapid *diffusibility*—characterises "Kreochyle" in a marked degree. This property is that of passing quickly through membranes (as exemplified by the walls of the stomach), and of thus being quickly incorporated with the blood-supply it is destined to renew and replenish. Professor Vaughan has experimentally shown that this liquid food possesses the property above-named highly developed, and hence to this power may be esteemed the value of "Kreochyle" in assisting the restoration of the vital powers when these are at a low ebb. Containing no drugs whatever, but consisting entirely of the materials of the best English beef, this preparation has been shown to possess stimulating effects well-nigh equal to those of alcohol, but necessarily without any of the subsequent depression which follows the use of the latter agent. In addition to its use as a medicinal and restorative agent in cases of disease, we may add that we have recently had an opportunity of witnessing the effects of this food in a case of deficient digestive power, accompanied by acidity and flatulence. The administration of "Kreochyle" in small and frequent doses relieved the pain and nausea, and gave rest to an irritable mucous membrane, until such time as other foods could be borne and digested. Those in want of a safe and satisfactory liquid food, for any form of weakness or disease, cannot do better than give "Kreochyle" a trial. The central depôt for "Kreochyle" is at Birkbeck-road, Leytonstone, London, E.

THOMSON'S CONCENTRATED NERVE TONIC.

Mr. Thomson, of the Central Pharmacy, London-street, Glasgow, has forwarded us a sample of his "Nerve Tonic," which we find to be an agreeable form of nerve-stimulant containing no injurious drugs or chemicals, and likely to be beneficial in cases of nervous prostration and weakness generally. This form of tonic may be safely used whenever a tonic is required, and in cases of neuralgia and in allied disorders is likely, we should imagine, to prove highly useful.

Pure Air and Houses.—Purity of air cannot be maintained in a house unless it be thoroughly dry. Setting aside the not inconsiderable quantity of water produced by our own breathing and by the combustion of gas, oil, and candles, the air of a house is liable to be rendered unwholesome from excess of moisture—1st, by absorption of water from the rock or soil below; and 2nd, from the porous stone of which the building is constructed. Not only is the air loaded with moisture from these sources, but it is rendered impure from the exhalations of fungous vegetation or dry-rot, which at the same time destroys the joists and other carpenter work, and seriously affects the stability of the house. It is a mistake to suppose, as many do, that dry-rot attacks only the wood in the basement story. It is a common occurrence for the ends of joists built into porous stone to become affected by fungous vegetation; and it is frequently seen in pulling down old tenements that the ends of the joist are quite gone, and that, probably, for many years the joists have been resting only on the plaster cornices of the rooms. The remedy is the use of "shoes" of glazed fire-clay or other material, which are built into the wall, and into which the ends of the joists are placed. The "shoes" should be somewhat larger than the joists, which should be kept in position by little wedges of wood, so that air can play freely around the end of the joists. Such protected joists will last for hundreds of years, if other circumstances are favourable.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.

GENERAL.

Important to Correspondents.—We beg to direct renewed attention to an announcement that repeatedly appears in Health. The Editor cannot undertake to reply to correspondents by letter, except under exceptional circumstances, which are determined solely by the Editor himself. Subscribers wishing back parts or numbers must address the Publishers of Health, and *not the Editor.* All communications respecting the business department of Health must be addressed to the publisher.

Oliver.—The price of the book you name is 8s. 6d., subject to the usual booksellers' discount.

Intending.—Any manual of physiology will give you the information you require; and we should prefer "Huxley's Physiology" as a manual for your purpose.

Caput.—There is no doubt that a vast amount of evil is wrought in the way you mention. The case only forms additional argument for the suppression of quacks by law.

A. Alston.—We believe that the food of man is determined by race and climate. Man is no more of necessity a vegetable feeder than he is a meat eater. He takes what lies ready to his hand in the way of foods, and contrives to exist on the special food which his surroundings afford.

F. Harris.—Address your inquiry respecting back parts of Health to the publishers. With such matters the Editor has nothing whatever to do.

Old Subscriber.—We believe the gentleman regarding whom you make inquiries is thoroughly competent to deal with cases of the nature you describe. There is another establishment for the treatment of such cases at 12, Fitzroy-square.

SANITARY.

B. Locke.—We do not think there would be any danger in the course you propose to follow. The experiment has been tried before, but with faint success.

Energy.—The smell of which you complain probable arises from decaying wood. Have the washhand-basin taken down, and the floor thoroughly examined.

Ebestein.—See recent articles in Health under the head of "Healthy Houses." We do not think there is any danger to be apprehended from the situation of the closet you name.

Sanitary Engineer.—The statement that "effective boiling must produce at least a suspension of activity of germ life," is founded on the biological experiments of Tyndall and others (see Tyndall's "Floating Matter of the Air"), which show that infusions of matter known to contain germinal organisms may be sterilized, permanently or temporarily, according to the degree and prolongation of heat to which they were subjected. There is only one mode of "effective boiling," in the sense in which the term was used in Health, namely, that the water or other fluid should be kept at the boiling-point for some time. We do not doubt that a *suspension* of germ-activity is induced by even a short exposure to the boiling-point. 2. By "destructive disinfection," we mean a

process which shall destroy germinal matter beyond the possibility of its re-awakening into vitality. Chemical treatment of a fluid with carbolic acid, "Sanitas," nitric acid, &c., might be styled a process of destructive disinfection; but we know of no purely *filtering* process which could be put forward as capable of destroying germs whose size is to be measured by the ten-thousandths of an inch or less.

Gasometer.—The smell is unpleasant—we cannot go so far as to stamp it as unhealthy. Apply to the Clerk to the Local Board or authority. If you get no satisfaction let us know, and we shall discover legal means of obtaining an opinion.

MEDICAL.

H. Filer.—Guard the child assiduously from cold, and use Fullers' Earth. What you complain of will probably disappear as the child grows. If not better, write again.

Oliaom.—We should recommend you to make a change in your food—to give up tea, try cocoa instead, and likewise to see the effect which a larger proportion of vegetables in your food would have on your health. A little Æsculap Mineral Water, taken in the morning, might also benefit you; and you also apparently require more open-air exercise.

M.P.—Depends very much on the habits and general constitution of the individual, as well as the food taken and other conditions. The individual alone can be the judge.

Wales.—The patient concerning whose case you write, had better be instructed to give a full account of her own case. We are unable to form any opinion from the statement mentioned in your letter.

C. B.—We regard the symptom of which you complain as due to some derangement of your general health; it may even be connected with indigestion. The medicines you mention are suitable for biliousness, taken, of course, in proper proportions.

Fair Maid.—Try a little carbolated Vaseline applied to the part, and if not better write again.

Veritas.—See advice to "F. A. E." below. There are no books on the topic you name which you could understand. Such as are popular in their nature are, as a rule, untrustworthy. See Dr. Pratt's "Sermon to Young Men."

F. A. E.—You suffer from no disease, and must learn to control your nervous symptoms. Sleep on a hard mattress, avoid fluids late at night, and use cold sponging. Take plenty of open air exercise, and you will in due time recover. You should also know that what you complain of is, in many cases, rather a sign of health than otherwise.

Frank.—We should advise you to alter entirely your mode of living. Try a vegetable dietary, and guard strictly against constipation. It is quite possible that you may require some special treatment, and with this view we should recommend you to have the ulcers touched with caustic, and to take a dessert-spoonful of the following mixture twice daily:—Iodide of potass, half a drachm; infusion of quassia, 6 ozs. Mix.

Miss R.—The symptoms of which you complain are liable to be produced by a variety of causes, and it is therefore extremely difficult to answer your query directly without knowing more of your case. But we may say that, as a primary measure, we should recommend you to attend strictly to rest taken before and during your symptoms. The pain is not natural, but an indication of some slight weakness. Alcohol should never be taken under the circumstances, as it tends rather to increase than modify the evil. We fancy in your case the cause is very slight, and easily remedied. Try the effect of rest, and of 10 grains of bromide of potass taken twice daily while the pain continues. Glad to be of any further service.

Le Pied.—Do you suffer from any gouty symptoms? These will account for your pain; but in any case we should advise you to try the effect of painting the joint with tincture of iodine. And we might add that in your case we should attach considerable importance to rest, and a strict surveillance to your general health. If not improved write again; we may advise you in some other fashion.

Lady S. S.—How do you know that the affection from which you suffer is lumbago? That affection is liable to be imitated by many other complaints. Send us a statement of your symptoms and we shall advise you. Meanwhile, to relieve the pain, try the effect of wearing flannel across the loins, and of hot salt-water baths.

B. B.—See advice to "Amateur Athlete" in No. 45 Health.

N. E. V.—Don't alarm yourself so long as you do not feel any ill-effects; what you describe is a sign of good health. Use cold sponging, and take active exercise.

D. McDermid.—Difficult to say about source of blood—probably lungs. Give cod-liver oil, strengthening food, and warmth. The "Professor" is a herbalist quack. We have heard of his doings for a long time.

Socrates.—1. Dumb-bells should not be used by young children at all. Apt to cause strain on growing chests. 2. No; no harm, so far as our experience goes, during the periods you name. Depends entirely on individual capacity and strength. Best to be on side of moderation. 3. Use the "cod-liver oil cream" (to be had of Mr. Thomson, chemist, Dublin-street, Edinburgh) during the winter.

Felix Byrne.—1. No; if the resort is mild (*e.g.* at Bournemouth in England) it should suit. 2. In about 1½ or 2 hours after a meal.

W. W.—Try the application of Rowland's Macassar Oil (pink colour) for a time. If not better, write again. You might try the effect of shaving bare for a time.

F. R. S.—See and follow advice to "A Foreigner," in Health, No. 44. If not better, write again. You are working over hard at present.

Sensitive Thomas.—Your description of your symptoms is not at all full. Try the effect of a fruit and vegetable dietary as a cure for constipation, and use cold sponging. You do not assign any *cause* for your ailments.

G. S.—All we can say is, that the secretion you name is *not* what you suppose it to be. Had it been so, you would not now have been alive to write your letter. You are in a chronic state of morbidity. We wish you well; but you can never be cured so long as you persist in making a belief of a delusion. If you ever require to see a good London authority, we can put you in the way of procuring a sound, honest opinion.

T. C. W.—No doubt close confinement, telling on the general health, will cause neuralgia. See to this, and try the following:—Sulphate of quinine, one drachm; dilute sulphuric acid, a drachm and a half; syrup of orange-peel and tincture of orange-peel, of each four drachms; water to make up six ounces. A dessert-spoonful thrice daily.

Despair.—We should recommend you to rest; to take occasional hot salt-water baths; and to take for a few days the tonic recommended to "Morbid Mind" in Health, No. 46.

Elder Lee.—1. Take thrice daily 15 drops *Fer Bravais* in a little water. 2. As a local application you might try an ointment made of oil of cade, 2 drachms; glycerine of starch to make up 1 oz. Apply to the part. Let us hear how you are shortly.

F. K. S. (or T.).—You should take through the winter a little cod-liver oil daily as a fortifying and tonic medicine; clothe warmly; and try the following as a tonic only when threatened with an attack:—Citrate of iron and quinine, 1½ drachms; carbonate of ammonia, 2 drachms; tincture of orange peel, 2 oz.; water to make up 6 oz. A tablespoonful thrice daily. When the sciatica is developed you should have an injection of morphia into the nerve made daily by a physician.

W. Hardy.—We should advise you to have a course of cod-liver oil and iron (3 drachms syrup of iodide of iron, and 1 oz. mucilage, to 6 oz. of oil), and to take of this a teaspoonful thrice daily after food. When the cough is bad, you might inhale the steam arising from a pint of hot water into which a teaspoonful of Friar's "Balsam" has been placed. Food to be nourishing, milk and eggs chiefly, light soups, &c.

T. V. B. M.—Depends on the nature of the swellings—if scrofulous, they show a constitutional affection. Yes; with safety; but the case is one for a medical examination and opinion.

T. Bermonstel.—[Your letter is only answered because it has been handed into the office. You should know that no letters sent to any private address, connected with Health, are attended to. You have an Editorial address repeated weekly—please attend to use that in future.] Give up tea and coffee; take cocoa or milk, instead; use Pepsine with your food, and do not eat late at night. You possibly have too confined hours. Take more open-air exercise.

Parnell and Harman.—For tapeworm in an adult:—Take no food for eight hours; then at night take 30 minims extract of male fern in an ounce of peppermint water, to which has been added a drachm of gum acacia powder. Next morning take a dose of castor oil, and at midday a large plateful of mashed potatoes. See that the "head" (a minute rounded body), along with the slender neck, is brought away; if not, repeat the treatment as soon as fresh portions begin to be discharged.

A. F. C.—In such a case as that you describe, we should recommend you to obtain a good medical opinion on the general health and nervous condition of your child. We can send you the address of a reliable authority on receipt of stamped addressed envelope.

John Manning.—1. Attention to general health; giving a tonic (*e.g.*, cod liver oil and iron) through the winter; and using bread-and-milk poultices when the styes come. 2. Use "Carron oil"—olive oil and lime-water mixed—as an application to burns.

T. H.—You are over anxious about yourself. Read and follow advice to "A. Keay" in Health, No. 46. Don't be nervous.

Veritas.—See advice to "A. J." in No. 46 Health respecting

[*Continued on page 352.*

INTERNATIONAL HEALTH EXHIBITION,

LONDON, 1884.

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President—His Royal Highness the Prince of Wales, K.G.

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food. You might also try the effect of a powder composed of four grains rhubarb and three grains pepsine—to be taken after meals.

Caxtonian.—Be careful about walking or taking any exercise for at least an hour after dinner. You must rest after food. The interval between dinner and tea is rather long. This will account for faintness. Try a cup of cocoa and milk at five, and a biscuit and glass of milk say at 8 or 8·30.

W. Haswell.—Have the children's throats examined by a surgeon. If much enlarged, the tonsils should be excised. This is the only permanent cure, and prevents all future ailments.

Mona.—Avoid unwashed vegetables and impure water; and for the thread worms use an injection of infusion of quassia, or of tincture of the perchloride of iron (half an ounce to a pint of water), daily. Occasionally an injection of salt and water cures such a case.

Midwife.—1. The condition often depends on causes which no mere drugs can cure; and the iron can only act as a general tonic—never as possessing any special influence. 2. No. 3. Depends on nature of case. Cause may be very simple—often the reverse—from acidity of secretions to serious displacement. 4. No objection, but not required at that period. 5. See answer three. 6. Occasionally it may (see reply one). 7. Faulty conditions depending on acidity of secretions.

Acnan.— Properly-adjusted truss and support, rest, and no employment involving exertion or strain.

Draper.—Take more open-air exercise; a little *Fer Bravais* (ten drops thrice daily in water); food to be light and nourishing. Give up tea, and take cocoa instead.

F. B.—The case you name is one for the opinion and counsel of a good surgeon. He alone, after a thorough examination of the child, can advise you as to cause and cure.

Ginger.—For irritation of skin or weakness of blood use hot baths frequently, and take the lime powders prescribed to "Alga" in Health, No. 45. 2. Pay attention to cleanliness, and bathe parts with water in which alum has been dissolved.

Liberate.—Don't be morbid. Read and follow advice to "A. Keay" in Health, No. 46. You will get quite well in time. (No stamped envelope enclosed.)

Tortoise.—1. See advice to "H. Hardy" in present number. 2. See advice to "F. K. S." in present number. 3. We do not know of any gymnasium in your district. There is one at 75, Albany-street, N.W.

Hard-Pressed.—We think that your loom-labour, as over-hard work, is at the root of your troubles. We should say nothing but a prolonged rest will do you any good. Rest, and take fifteen drops *Fer Bravais*, in a little water, thrice daily; food to be light and nourishing. Injections of Condy's Fluid and tepid water (one part to fifteen water) will also do good; but rest is your sheet-anchor. Have no false delicacy regarding consulting a medical man. He would be the first to sympathise with you. Your work is evidently, we repeat, a source of some health-danger to you.

A. B.—Rest after meals, and avoid strain; give up tobacco if it causes irregularity of heart's action. Have open air exercise; and cold sponging as a tonic.

Roman.—Yes; but don't continue the tonic too long; take a teaspoonful in a wineglassful of water, half an hour or so before meals, thrice daily.

Frank.—Try the ointment prescribed to "Elder Lee" in present number of Health.

Hopeful.—Yours is a case in which we should decidedly recommend you to see a medical man. Only a personal examination can satisfy you. We can send you an address of a reliable physician on receipt of stamped addressed envelope.

Pancreatic.—Read and follow advice to "Mona," in present number. Don't be so foolish as to think your ailment is worthy of concealment. It is a common affection.

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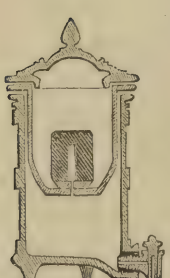

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 7, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

A medical friend, writing to us concerning the ways and works of quacks, remarks a well-known habit of the notorious species. By way of placing readers on their guard, we may reproduce the substance of our friend's observations. The quack-advertisements in the newspapers frequently notify to the unwary that "advice" is given "gratis." The unsuspicious mind, full of a belief in the goodness of human nature, and praising the charity of those noble souls who would thus appear to live only "to benefit (?) suffering humanity" (as a quack neatly enough styles his vocation) at once writes for the valuable advice and directions. By return of post comes a printed circular, containing "directions" and "advice" no doubt, but of a kind practically useless to the reader, and designed with foxy craftiness to throw the reader on the tender mercies of the quack. Before us lies a circular, which, with a beautiful rhetorical flourish, gives a series of Latin names and abbreviations by way of a prescription, and informs the reader how the ingredients of this valuable medicine are to be prepared. So far all seems clear, plain, and philanthropic. But when the reader begins to inquire where the plants and herbs of the prescription may be obtained, he finds himself nonplussed. Where, for example, can "Decoctum Geoffroyæ inermis" be obtained? Where is "Rad. Rumex Crispus," to be had? The reader is in despair. Quack-philanthropy solves the difficulty in its own and characteristic fashion.

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Taking courage, the reader continues his perusal of the circular. "I am requested by so many," says the author of the print, "(who have not the time and facilities for having this carefully made up) to get the prescription made up for them. I have, therefore, had a considerable quantity prepared, and put into boxes ready for use." Then follows what one expects, namely, the nice little price for the nice little vegetables, which the ingenious fabricator will send "privately," and "without any glaring advertisement or name on the box." On receipt of cheque or Post-office order for the amount required, this valuable remedy will be sent to any address. And the price? Well, rather high, we should say, for the simple "herbs of the field." The prices of the inestimable herbs (in boxes) are 12s., 21s., and 42s.; whilst "for severe cases," or when a number of friends desire a conjoint treat in the way of a decoction of herbs, the modest sum of "four guineas" is charged. "The figures may seem high," apologises the vendor of herbs, "but the boxes," he adds, "*contain a large quantity*" (*sic*). The ingenious nature, as well as the grammar, of this latter excuse, will doubtless be fully appreciated by our readers.

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The "cloven hoof" of quackery crops out elsewhere than in this practice of obtaining exorbitant prices for a few herbs. There are to be no dealings with chemists; for the chemists "send direct to me," says the herb vendor, "and then charge their customer some commission or percentage." We should like to hear of any case in which a respectable, educated druggist has paid money to the author of the circular before us for herbs, which, if in existence at all and if used in medicine, he could much more readily have obtained from his wholesale house, and have compounded himself. Druggists are not quite so silly or stupid as quackery would have us believe. Again: our herb vendor has no "agents"—for reasons sufficiently obvious, of course; but he will feel obliged if his patients will recommend his wares to their friends. Advertising in newspapers, and the credulity of the public, will together save the expense of "agents," for a time at least, and until the herb-decoction business gets played out. We often hear herbalists, pure and simple, condemned; but a man who understands something of the properties of herbs, and who sells for a few pence a decoction of dandelions or some similar simple preparation, knowing the effects of the beverage and making no pretence of secrecy, is not to be mentioned in the same breath with the quackery that flourishes in more pretentious places, and fleeces its victims of guineas for herbal trash.

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"Recreation for the People" is in reality a branch of health-science. Interested minds re-act upon bodies, just as healthy bodies act upon the brains they contain; and we are, therefore, glad to see that the labours of the committee of ladies and gentlemen who are making the "Royal Victoria Coffee Hall" (Waterloo-road, London, S.E.) a place of sensible recreation, are meeting with deserved success. A course of illustrated lectures is now being given on Tuesday evenings. A discourse on "Ancient English Dragons" would seem to be a form of recreation (even when illustrated with lime-light views) ill-adapted for the district wherein the "Royal Vic'." is situated. But the lectures are listened to with rapt attention; the lecturers are loudly applauded; the audience is of the most orderly description, and relishes with gusto the additional "variety entertainment" which is provided at 9.30 p.m. by way of a light after-piece. This movement, combining popular education with amusement, must not be lost sight of by those who are intent on improving the condition of the poor. Its success is the best guarantee that the minds of the slums, on the whole, are not quite of such degenerate character as many have been led to suppose.

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"Can artificial injuries and deformities be inherited?" is a question of high importance, and one which appears susceptible of an affirmative answer. The question has often

been asked why sheep are not born with "docked" tails, or why terrier dogs, whose tails have been artificially "amended," do not show, in their offspring, the perpetuated deformity? The answer to such questions is simply this—that the deformities in question are not inflicted at a period of life, and do not so affect the constitution of the animals that their perpetuation is rendered a necessary result. In other words, if the conditions under which the injuries are inflicted do not conform to the laws of "inheritance" (or "heredity") we cannot expect such deformities to be perpetuated from one generation to another.

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But it so happens that observation occasionally furnishes us with interesting illustrations of the working of laws which we may only partially and imperfectly understand. Here is a case—culled from an interesting American contemporary, *Science*—which is certainly worth recording as an example of the propagation of physical injuries. A gentleman, when seven years of age, had the second toe of his right foot deformed by wearing a tight boot. The first and third toes were forced together, so as to cause the second toe to be pressed under and backwards; the second joint becoming in due time curved in a rigid and permanent form. This joint, receiving a large amount of shoe-pressure, became troublesome in after-life. The gentleman was twice married. To the first marriage, there were born six children, the second child being a daughter. This daughter inherited the crooked and deformed toe of her father; but the other children—all sons—possessed normal feet. The deformity, however, also appeared in a child of one of the sons—the brother next younger than the sister—the deformity affecting the same foot and toe in the child, as in its grandfather.

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By his second wife, the gentleman had only one child—a son. He inherited his father's deformity; but it was the second toe of the opposite or left foot (instead of the *right* foot, as in the father), which was affected. The correspondent of *Science* who gives these details, states that all the four persons with the deformed toes are still alive, and that he has fully satisfied himself of the correctness of the statements and facts above detailed. The original subject of the deformity says that his feet were normal and natural until he was seven years of age. He remembers the growth and production of his deformity; and an examination of the foot does not indicate that its peculiarity arose from any *inherited* cause. There is, besides, no history of any deformity or other peculiarity in his family; and from the facts already detailed there would appear to exist no reasonable doubt that the malformation, as such, was artificially produced; and secondly, that it was perpetuated in the descendants of the subject in which it originally occurred.

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We shall return to this topic and to the accounts of allied cases at an early date. We would meanwhile ask the readers of Health to be kind enough to furnish us with particulars of any similar or allied cases which may be known to them. Facts like these are extremely valuable, both from a scientific and social point of view. We need hardly add that we shall treat all communications as strictly confidential, and that where mention may be made of the information thus afforded, no names or other specific allusions to personal histories will be published.

Original Essays

"Life is not to live, but to be well."—*Martial.*

MISTAKES IN MEDICINE.

There are no professional functions so often assumed by the non-professional as are those which belong to the field of medical practice. From the earliest times, when all that was known of medicine and surgery was barbarous and empirical, when magic and mystery were the agency of the Æsculapian and the cloak of the deluded, down to the present day of accurate observation, cautious generalisation, and instrumental aid in medical work, there have ever been ready for advice, on any emergency, large numbers of kindly amateurs who seemed charmed with the idea of exhibiting superior knowledge. So long as mystery and mummery held a large share in the armamentaria of the physician, it was certain that the hollow methods would be copied and extended by the needy and the credulous, but it might have been anticipated that the dawn of the scientific era, and the now noontide splendour of criticism and experiment would have cleared the atmosphere of superstition and mysticism in the use of drugs, and give the quietus to charlatans of all shades. In the grosser forms of charms and such-like agencies, acting wholly on the imagination, there is certainly little trust now placed; but the reliance which is still felt among large classes of the people in drugs, and complicated concoctions from the hands of the most ignorant pretenders, and in manipulation unguided by either anatomical or surgical knowledge, is a remnant of the same mystical beliefs as flourished centuries ago.

In saying so, it is not intended to assert that no good can come of this method, for we have here in full force, at least commonly, that faith which seems the essential to cure in many cases, and which, aided by time, often completes recoveries which appeared more than doubtful at the outset of the treatment. Experience of a somewhat extensive kind leads to the belief that the absolute confidence which places a life, perhaps, in the hands of a man whose sole claim to this effacement of the faculty of doubting may and does occasionally lead to healing, though the drugs or other appliances used may be totally inert, if not prejudicial. Bold, unscrupulous self-assertion has an immense power over most of us at best; and when body and mind are weakened or powerless under the weight of chronic illness, a tendency to grasp at what is proclaimed in every newspaper and on every hoarding as a *cure-all*, becomes a very passion. Under these circumstances, and with the inspiring assumptions of men engaged in the traffic, good results are sometimes had; but there is in the whole range of popular errors in medicine none so egregiously silly as this of swallowing unlimited quantities of mixtures supposed from their secrecy to be successful. Admitting the probability of occasional good, it is safe to say that so long as a preparation is kept secret, and lauded as a cure for various dissimilar diseases, judicious householders or sufferers will give it a wide berth, preferring the ills they have, rather than flee to others which they know not of. There is, unfortunately, no means of knowing the annual fatality caused, even immediately and directly, by secret remedies; but, judging from personal experience, the writer would place the number of deaths as very large; and the use of these among children has become such an evil as to cry urgently for legislative suppression.

Perhaps the most common, and certainly the most unaccountable, error in regard to the medication of Englishmen

is the love of drug-drinking present in a large section of the population. It is perfectly true—monstrous absurdity though it appears when plainly stated—that hundreds of thousands of our countrymen are in the daily, bi-weekly, or weekly habit of dosing themselves with potent drugs, and are at the same time enjoying the most perfect health. It is marvellous, and much to the credit of our forefathers, that after years of such treatment many of those people fail to injure themselves appreciably by the practice. The number of pills of a more or less purgative character used habitually under the supposition that a non-existing malady will be cured or some threatened attack avoided is quite incalculable. Many persons in perfect health look upon tonics as necessary preventives of something they cannot well define; narcotics get into regular use when they are by no means needed, and others imagine that their kidneys need regular stimulation by gin, nitre, or other diuretic.

It may be that on one or more occasions medical instructions have been given that a laxative or tonic is advisable, and henceforth on the slightest discomfort recourse is again had to the drug formerly found useful; and the most remarkably varied powers will be attributed to any simple means which have proved efficient on the first occasion. In this way not only are valuable medicines lost and thrown into disrepute, if the patient has intelligence enough to appreciate results, but in many cases valuable time is lost in applying appropriate remedies. It is by no means rare to find aged people who for many years have, with a regularity and pluck worthy of a better cause, once, twice, or thrice a week taken "a pill," of whose contents they know nothing, for a complaint of which they know less; and in many instances, one pill being enough to begin with, it has been found necessary to increase the dose to perhaps half-a-dozen on each occasion. In like manner the victims of some chronic complaints, such as rheumatism, and that hydra-headed monster "dyspepsia," go on using gallon after gallon of medicines which long ago have become flat, stale, and unprofitable.

Every now and again physicians meet with patients who show almost a mania for drug-drinking; they are dissatisfied unless constantly recommended their familiar "bottle," and an honest, firm expression of opinion on the weakness not unfrequently sends the victim elsewhere for advice. The writer at one time practised in a locality where stated payments were made by the workmen for medical attendance, whether such was required or not, and there it was found almost impossible to avoid giving medicines in amount far exceeding the necessity. These workmen have no respect for medical advice unless accompanied with a mixture; they would swallow the nastiest concoctions with complacency, and in some cases could scarcely be removed from the doctor's list, though entirely free from disease of any kind. Among the wives of these workmen the craze for drugs was even stronger, and either for themselves or their little ones they were seldom without a preparation of some sort. Tired of the doctor's monotonous dosings, or baffled by his determination no further to yield to the amiable weakness, a course of medicine from the chemist would next be tried, and in some way this strange appetite would be met. It is here we have the origin of much of the rather harmless quackery indulged in by more or less designing knaves, or kindly neighbours. A qualified practitioner may be compelled by business instinct or constitutional timidity to overstep the proper limits in medication, but conduct of this kind is not likely to be long continued, and the patient makes off to less conscientious consultants when the fleecing process is carried on indefinitely; or drops into the class of chronic hypochondriacs who listen to the sympathetic voice of every amateur in physic among the friends who tolerate their tales of suffering and of sorrow.

The difficulty experienced by every practitioner of medicine from the love of drugs on the part of those who seek advice becomes intense in the case of conscientious men who have not yet gained a position of comparative independence. These men must live; and many scientific physicians have at this stage descended from their ideal, and gone in for that fatal routine which consists so largely of ordering labelled "cures" for every disease. The public will not believe that the man who prescribes least physic is likely—nay, almost certain—to be the truest physician. They commonly believe that a consultation or a visit which does not end in the writing of a prescription or the supply of a mixture is hardly worth having, and is certainly unworthy of payment. Those who are fond of noting national characteristics may take it as proved that the weakness here referred to is much more fully developed in England than it is north of the Tweed. An experience of several years' practice in both countries brings this feature out in the most marked manner, and taken as a whole, though statistics are not obtainable to help us here, it may be guessed that the average Englishman consumes double the quantity of drugs taken by the Scot. Whatever may be the cause, one finds in the North less reliance placed on physic alone, and a greater heed given to direction in the laws of health, and those physiological principles which, if attended to, would add so much to the world's happiness, though possibly at considerable sacrifice to the doctor's pocket.

It may be hoped that the tendency to the intemperate use of drugs is diminishing under the influence of a better education in the country generally; and year by year there are issuing from our universities and medical schools a class of practitioners taught to be less meddlesome in the treatment of disease than their predecessors, and less dependent on the aid of physic. A slight amount of scepticism on the part of the educated public would help to eradicate the evil complained of, and set the doctors themselves in a higher position. The aid of "Health Lectures," and the more general teaching of simple physiological truths will, ere long, lift the community into such enlightenment as may at least mitigate this craving for drugs.

While the voluntary dosing of adult Englishmen must be left in their own hands, it is questionable whether the law should allow the same idle, ignorant, and often fatal habits to affect the children of the masses as they now do. The amount of unnecessary physicking which goes on in our nurseries, starting from the first hour of life, is shocking in the extreme. Could the child prodigies of the Macaulay order carry back their memories to the first five minutes after the first dressing, they would frequently find Mrs. Gamp in possession armed with the inevitable spoon, and preparing a foretaste of the miseries of life; day by day, or week by week, the image would become so absorbing that about the period of teething nothing else would be remembered; and as months rolled into years one of the chief elements of happiness would be

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists.—[Advt.]

found in the fact that a power of resistance to the infliction had arisen, and on that account powders and potions had become more rare. Why, in all the world, people will persist in purging infants out of existence before life is rightly begun, is a problem rather hard of solution. Instead of a virtual rule in favour of physic, there should be a stringent determination that the child shall have no such infliction without the benefit of a medical consultation, or other check.

It is a positive abuse of parental authority to keep pouring drugs into defenceless babes who, in nineteen cases out of twenty, have no need of such interference, and, in the twentieth case, have generally to thank the use of improper food or some careless exposure for the necessity. Even the castor-oil, Gregory's mixture, grey powder, &c., used so lavishly must be harmful when unneeded; but unfortunately these are not the only weapons in common use, and in many homes the impatient and lazy nurse or mother provides herself with preparations in the shape of soothing syrups and teething powders, which, intended to give nurse and child alike some hours of quiet sleep, too often ends in the fatal poisoning of the innocent victim. These cases are familiar enough to newspaper-readers, but it is quite well known that the number thus brought to light is a very small proportion of the actual fatalities. There is here an open door to the poisoner, and the laws relating to the sale of poisons are drawn as if intentionally inviting to criminal courses. It is true that there is a slight difficulty in the way of obtaining dangerous drugs, *sold as such*, from respectable druggists; but it is quite well known that certain patent medicines contain prohibited articles, which can thus be obtained from any grocer or oilman, however ignorant as to the properties of the articles sold, who chooses to spend five shillings for a licence. This prolific source of infant mortality has been over and over again referred to, even in Parliament; and every practitioner of medicine knows full well how widespread is the evil, how demoralising and deadly is the practice.

The drug-drinking among adults, and the unfortunate habit of dosing unnecessarily infants and children, are amongst the most conspicuous popular errors in medicine, but others, more detailed in character, may profitably be referred to in a future paper.

STORIES OF SCIENCE AND CRIME.

SEVENTH PAPER.—CASES OF FASTING (*Continued*).

Another case was that of a gentleman about thirty-three years old, who had often been subject to fits of depression and melancholy.

"For many years, I believe, the condition of this gentleman continued the same. He was induced to try the effects of change of air and scene; but this he declared wearied him too much, and finally he settled down a confirmed invalid of the *malade imaginaire* type, pure and simple. In seeking one day for advice from a professor of a schismatic school of physic, he gathered what he supposed to be an entirely new light as to the cause of his malady. The professor, very learned and imposing, detailed to the sufferer the ideas then prevailing as to the cause of primary digestion, and the experiments which Dr. Beaumont had conducted on that most interesting of physiological instructors, Alexis St. Martin. This history of the accidental shot which has made St. Martin such a figure in history, even to the present time (for I believe he still lives), the account of the opening into the stomach, of the notes that had been made from visual inspection of the process of digestion, the description of the gastric juice that was extracted, and the further explanation as to the solvent action of the gastric juice on food, became a perfect fascination for the anxious invalid; and when the learned expositor improved the occasion by telling his patient that all this demonstrative argument was but a prelude to the grand inference he drew as to the patient's present condition, the inference being no more nor no less than that the unfortunate patient could not possibly digest food because he produced no gastric juice, the enlightenment was complete, positive, and unanswerable.

"From that day, by a kind of logical determination which it was most difficult, and I may say at once impossible, to combat so as to carry conviction to the mind of the sufferer, he maintained that, as he had no gastric juice, it was utterly useless for him to take food of any kind, except water, which required no digestion. The idea implanted in his mind held its place, and was never uprooted. Unfortunately, it was confirmed by the effects of a first attempt at reduction of food. The stomach, no doubt very feeble and irritable, was relieved by a reduction of food, and therewith the depression of mind was signally relieved—an occurrence by no means unusual, and perhaps a natural consequence.

"Soon after the first attempt to reduce food to a minimum, there succeeded another stage, in which the desire for food appeared to pass away altogether. Then, when food was taken, by a great effort and with much repugnance, it caused pain, disturbance, and a greater depression than usual of mental power, with a more determined dislike to repeat the process, and a firmer and deeper conviction in the hypothesis that he failed to produce any of the natural digestive fluid.

"In time there seemed to be an entire failure of desire for food; a loss of sense of taste; a loathing at the odour of food; an irritable objection to have the subject of feeding even spoken about; and, finally, a resolute determination not to take any more food at all unless appetite or desire for some particular kind or quality of food revisited him. From that moment the rigid fasting commenced. Of water he would partake readily, but not largely, for he said that in quantity it was heavy and cold, and caused painful distension. He would take it to allay thirst, and nothing more. For ten days, under this *régime*, he went about the house and walked occasionally in the garden, refusing medical advice. After this he took to his bed, and declined to rise except to have the bed made. He now wished for medical attention, but was as resolute with his medical advisers against taking food as he was with the members of his family.

"The course of events in this example differs from that which was followed by Dr. Tanner and Reuben Kelsey in this matter of rest. The man who is now being referred to remained in bed until the hour of his death. His room also was kept quiet and warm, and he was permitted to sleep as often and as comfortably as could be wished. The other two—Tanner and Kelsey—walked about, and Tanner seems to have been often irritated

Chappuis' Daylight Reflectors.—Manufactory, 69, Fleet-street.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

and disturbed. The difference was all in favour of the bed-ridden experimentalist, and the fact was marked in the results, for he lived two days longer than Kelsey: he died on the fifty-fifth day, having abstained from all solid food and partaken of no other drink than water for seven weeks and four days. Once in this time an effort was made to feed him, perforce, with milk; but he resisted so determinately, and subjected himself to such danger by his resistance, that the attempt was not made a second time.

"Precisely as in the instances of Dr. Tanner and Mr. Kelsey, the great reduction of bodily weight occurred, in the gentleman whose history I am now detailing, during the earlier stage of the process of fasting. He sank into the extremest state of emaciation during the first three to four weeks of his trial, after which he did not seem to me to undergo further change, although I saw him almost daily. He slept a great deal, and at times he tried to read; but the effort at reading soon became wearisome and painful, and was never more than a mere listless occupation. He was not at any times irritable, except when pressed to take food, and he was fond of hearing the current topics of the day; but he soon wearied also at being conversed with, and would drop off into a semi-somnolent state while conversing. I never heard him complain of any pain or discomfort; he did not seem to express or feel desire to live, and he certainly never expressed any desire to die.

"As the last days of his life drew near, he became much feebler rather suddenly, and his mind, I thought, was inclined to wander for brief intervals. But he quickly recovered himself, and on the day before his death he was unusually clear in his mind. He was painfully shrunken in feature; his voice was low, and almost bleating; his colour was leaden dark; his lips were blue and cold; his limbs were cold; and his breath was cold and offensive, having the odour of newly-opened clayey soil. On the morning of his death he, for the first time from the commencement of his fast, expressed that he would eat, and that which he wished for was fruit or raw vegetable with cream. An attempt was made immediately to pacify his desire, under the hope that, if he once recommenced to take food of one kind, he might be tempted to take more promising support; but it was of no avail, and in fact nothing was swallowed. Soon after this he sank into unconsciousness, and so succumbed.

"I have given in the above the barest outline of facts of this long endurance of life during deprivation. It is sufficient, without further detail, for showing that the supposed impossible fast performed by Dr. Tanner is quite within the range of possibility, all supposition of imposture being entirely set aside. If on the fortieth day of his fast this gentleman had taken food, as Tanner did, I do not think there is a doubt but that he would have recovered."

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

MOUTH-WASHES.

The following formulæ are published by Ad. Vomácka in the *Seifenfabrikant*:—Guaiacum wood, 30 parts; Valerian root, 30; Staranise, 40; cloves, 20; cochineal, 10; borax, 3; Cognac, 1500; oil of cloves, 2·5; oil of sassafras, 2·5; oil of neroli, 1; oil of peppermint, 4·5; vanilla, 10; rose water, 300; glycerine, 100 parts. Digest the guaiacum wood, valerian, cloves, and staranise in 1,000 parts, and the ethereal oils and finely-cut vanilla in 500 parts of the Cognac during fourteen days. Then express and mix. Having digested the cochineal in the rose water and glycerine in which the borax had previously been dissolved, add this mixture to the former. Let the whole stand for some time in a cool place, then filter through a double filter. This is a most superior mouth-wash, though rather more expensive than the following ones:—

Eau dentrifice (Dr. Pierre, Paris):—Tincture of cedar wood, 300 parts; oil of peppermint, 1 part; oil of anise, 1 part. Tincture of cedar wood is prepared by digesting one part of the chips of cedar wood (obtainable in lead pencil and other factories) with five parts of cognac.

Salicylic Acid Mouth-Wash (Kolbe):—Salicylic acid, 180 grains; distilled water, 2 fl. oz.; cognac, 10 fl. oz.; oil of wintergreen, 10 drops; spirit of neroli, 20 drops.

Eau de Botot:—Tincture of cedar wood, 400 parts; tincture of rhatany, 100 parts; oil of peppermint, 3 parts; oil of lavender, 1·5 parts; oil of staranise, 2 parts. Tincture of rhatany is prepared like the officinal tincture of krameria, only that cognac is substituted for diluted alcohol. In all of the above preparations diluted alcohol may be used in place of cognac, but the products are not so fine as when the latter is used.

MEAD.

Mead is an old-fashioned beverage, but a very pleasant one, if care is taken in making it. It is generally made over strong, too much honey being used to the proportion of water. The following is a good recipe:—(1) On 30 lb. of honey (clarified) pour 13 gallons of soft water, boiling hot; clarify with the whites of egg well beaten, boil again, remove all scum as it rises, add 1 oz. of best hops, and boil for ten minutes, then pour the liquor into a tub to cool, spreading a slice of toast on both sides with yeast, and putting it into the tub when the liquor is nearly cold; the tub should stand in a warm room. When fermentation has thoroughly begun, pour the mixture into a cask, and, as it works off, fill up the cask, keeping back some of the liquor for this purpose. Bung down closely when fermentation has ceased, leaving a peg-hole, which can be closed up in a few days. Let it remain a year in the cask before bottling off. (2) To 15 lb. of honey add 6 gallons of water, clarify the honey with white of eggs, boil for ten minutes, and keep thoroughly skimmed; add a handful of mixed herbs, thyme, rosemary tops, and bay leaves; boil for half an hour more. Strain the mixture into a tub upon 5 pints of ground malt, stir well together, and, when lukewarm, strain through a cloth into another tub. Work it with yeast, and, when

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

fermentation is set up, pour it into a cask. Suspend in the cask a muslin bag containing sliced ginger ½ oz., ¼ oz. each cloves, nutmeg, and mace, well bruised; bung up tightly when it has ceased working, letting the bag of spices remain. It should stand in the wood for a year, and then be bottled off.

Sack Mead.—To every gallon of water allow 4 lb. of honey; boil for three-quarters of an hour, skimming well; to each gallon of liquor add ½ oz. of hops, boil again for a quarter of an hour, pour it into a tub, and let stand for 24 hours, working with yeast; then pour into the cask, and to 13 gallons of liquor allow a quart of sack; close lightly until all fermentation has ceased, then bung up close. If a large cask, allow a year in work before bottling off.

American Mead is made with cider. Take 20 lb. of honey and 12 gals. of good cider, and blend them together in a tub; ferment with yeast, then pour into a cask and add ½ gal. of rum, ½ gal. of French brandy, 4 oz. of red tartar, dissolved, and ½ oz. of cloves. Bung down close when it has ceased working, and bottle off at the end of three months. It will be fit for use three months afterwards.

During the year 1882 typhoid fever caused in Paris 3,276 deaths, out of a total number of 58,674. In 1881 the deaths were 2,120, out of a total of 56,820. Thus, the mortality from typhoid fever was greater by 1 per 1,000 in 1882 than in the preceding year. Moreover, during the past ten years, the total number of deaths has presented a progressive increase. Ten years ago the mortality oscillated between 21 and 23 per 1,000, in 1881 it was 25·37 per 1,000, and in 1882 it was 26·55 per 1,000. Of the 3,276 deaths due to typhoid fever last year, 1,449 occurred in the hospitals and 1,827 at home. The number of cases in the hospitals was 9,361, equal to a mortality of 15·47 per cent. The total cases treated were in hospital for an aggregate period of 240,083 days, giving an average to each of 25 days. Each day's treatment costs the authorities 3 fr. 10 c., making a total cost of 744,257 fr. for the whole number. But it is manifest that the three weeks' treatment in the hospital does not represent more than a part of the time during which the patients would be withdrawn from their occupations. It is not too much to estimate the total incapacity resulting from an attack of typhoid fever at two months—one month of illness, and one of convalescence. Now, the municipal statistics of Paris show that more than a third of the victims were men between fifteen and thirty-five years of age, the exact proportion between these ages being 39·43 per cent. It cannot be an excessive estimate to value the labour of these men at 2 fr. a day, taking one with another. The two months each would give a total of 563,660 working days lost by the 9,361 patients, and correspond to a sum of 1,127,320 fr. to add to the 744,257 fr. expended by the authorities in their treatment, making a total for the hospital cases of 1,871,570 fr.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

ECONOMICAL BREAKFASTS, DINNERS, AND SUPPERS.

By Mrs. Thwaites, of Liverpool.

FIRST PAPER.

In these days of general improvement it would be hard indeed if cookery were to be left behind. Although a great deal has been done to improve it by lectures, classes, and new cookery-books, much yet remains to be accomplished. Few Englishwomen of the middle and working classes can prepare the cheap, appetising dishes that Frenchwomen are in the habit of fabricating every day. There is a great deal too much conservatism in our cookery—a shrinking from new things and new ideas. Whatever is cheap and good should be tried at once, and no pains spared to make the most of it. Seeing how largely the health and consequent well-being of the nation depends upon the food eaten, it is plain that the subject is an all-important one. Part of every woman's education should be not only how to select the best and most useful articles of food, but how to use them and turn them to suitable account.

Breakfast, to many the most important meal of the day, is, perhaps, the worst prepared of all. The conventional tea or coffee and bread and butter, or bacon, exclude all variety. *Dinner* is not so bad, its chief fault being its sameness, and a tendency to have the same joint of meat all the year round, cheap soups and dishes, composed of vegetables, being almost unknown, except at the tables of the wealthy. *Supper* is, in the main, too heavy a meal, and by no means calculated to insure good digestion and rest.

The breakfasts, dinners, and suppers given in this series of papers are planned not only with the hope that they may prove useful in themselves, but that the suggestions thrown out may lead to fresh ideas as to how available materials may be used up profitably. True economy means thought and knowledge on the part of the mistress of every household. The various wants of the family must be considered as well as cheapness of material and saving of labour and time. Working women know only too well, that their time and strength come to an end all too soon.

Breakfasts.—For this meal there can be no better dish than porridge of one kind or another—oatmeal, Indian and barley meals, hominy and ground rice, can all be used in turn. It is a fact worthy of notice that children accustomed to porridge retain their liking for it when grown up, while adults beginning to use it seldom have the same relish for it. Parents should consider this fact well. The preparations of the above-named cereals do not naturally differ from one another; they all require well boiling in plenty of water or milk. Oatmeal I place at the head of the list. Containing, as it does, sufficient for the healthy support and growth of the body, for its full development, both mentally and physically, too much attention can hardly be paid to it. Coarse oatmeal should be partly prepared overnight, both to insure perfect cooking of the grain and to economise time. Put a quart of water to boil, add a good teaspoonful of salt, sprinkle in about ½ lb. of meal, stir till it thickens and boils, draw the pan aside, and boil slowly for half-an-hour; set away until next morning, when enough

water to bring it to the desired consistency must be added, and it must be boiled slowly again for twenty to thirty minutes. It is certainly best eaten with milk, but sugar, treacle, or stewed fruit are all good. If a warm beverage is necessary, freshly-made tea well diluted with milk may be taken; cocoa being more nutritious than tea, is best taken with less nutritious foods than oatmeal, but, of breakfasts, more in future papers.

Dinner.—Soup should, whenever possible, form the basis of this meal. It is cheap, and easily prepared. In cold weather no kind of food so quickly restores warmth as this. Lentil soup is one of the best and cheapest. Wash ¾ lb. lentils well in several waters, put them into a pan with 2 quarts of cold water, a good-sized onion, and two or three outside stalks of celery. Boil 1½ to 2 hours; turn the whole out on the back of wire sieve put over a bowl, rub all through the sieve but the husks; put the soup into a pan, and mix 1 oz. flour smoothly with ½ pint milk, 1½ teaspoonfuls of salt, and ¼ teaspoonful of pepper; add to the soup and boil up. If desired ½ oz. of butter may be stirred in. Plenty of this soup, with home-made bread, would be a sufficient dinner for children. Lentils contain about 24 per cent. of nitrogenous or actual flesh-forming substance, and although they can be prepared as a solid food, popular taste has decided in favour of soup.

Meat roasted in a saucepan.—When only a small piece is wanted, this is a cheap and good way of preparing it, less fuel being required than for baking in the oven or roasting in front of the fire. A tiny gas-stove, with the gas turned as low as possible, will do it admirably. An old iron pan, with the tin worn off, should be used, with a close-fitting lid. Take 1½ lb. to 2 lb. of mutton or pork, or even 1 lb. of steak—if the latter, it must be rolled up and secured with a small skewer. A little fat should be cut off the meat and put into the pan to melt; the meat must then be lightly floured and put in, and the lid put over. A little practice will soon enable anyone to regulate the heat, and baste and turn the meat when necessary. To make the gravy—mix half a tablespoonful of flour smoothly with a quarter of a pint of water and a little salt. When the meat is taken up, pour off all the fat but about a teaspoonful, pour in the flour and water, stir till it is boiled thick, and pour round the meat. 2 lb. will take about three-quarters of an hour, if it is in a compact shape. If carefully cooked, this will have the flavour and smell peculiar to roast meat. Small birds can be prepared in a similar way.

Supper.—A useful and pleasant supper dish is stewed Spanish onions. Take four or five medium-sized onions, peel and put them on to boil with water to cover and a teaspoonful of salt, boil slowly for one and a half hours, take out the onions without breaking; set aside the water. Put 1 oz. butter into the pan, when melted add 1 oz. flour, slightly brown the flour, then stir in ¼ pint of the water in which the onions were boiled (the rest will be saved for soup) and ¼ pint milk; stir until thick, and season with salt, pepper, and a tablespoonful of ketchup; put the onions into this sauce, cover the pan, and simmer very slowly for one hour longer; take them up into a dish and pour the sauce round. Thoroughly-cooked Spanish onions are digestible, and they have a slight effect in inducing sleep.

A Valuable Invention.—It is gratifying to learn that Mr. R. Adams, of 17, Blackman-street, London, S.E., whose fanlight-openers and silent door-springs are being extensively used, has received large orders for his Patent Reversible Window. The sashes, although they slide up and down in the usual way, can be instantly turned inside out, enabling anyone to clean each side of the glass with ease, while standing in the room.—[Advt.]

ARE NICKEL-PLATED COOKING AND EATING UTENSILS POISONOUS?

Nickeled utensils were first made more than thirty years ago by the late Professor Boettger, but have recently become more popular, owing to the success that has attended Dr. Fleitmann's attempts to work nickel on a large scale, especially of malleable nickel that can be rolled. The increased favour which this brilliant silver-white metal has met with recently has given rise to the question of its poisonous quality. Dr. Fleitmann does not consider the metal as poisonous. The *Polytech. Notizblatt*, formerly edited by Dr. Boettger, thus discusses the interesting question:—

At the present time metallic nickel and its salts are prepared in a very pure state, the copper and arsenic frequently present in nickel ores are almost completely removed. Especial care is taken to remove the arsenic, because it would injure the colour of the nickel plate.

In regard to the supposed poisonous nature of nickel, it may be remarked that nickel and copper alloys have long been in use for domestic utensils, as well as copper itself. Such vessels must, of course, be protected from acids, and always kept clean and bright. When this is done none of the metal passes into a soluble form. All metallic salts are more or less poisonous, even the salts of iron, to which the salts of nickel are more nearly related than to those of copper, which are indeed quite poisonous. Metallic vessels should always be kept clean, and this is true of nickel too, and then there is no need to concern ourselves about its poisonous character. It would be very desirable to have thorough and careful experiments made upon the physiological action of nickel salts when in solution. Birnbaum has shown (in *Dingler's Journal*, ccxlix. 515) that solutions slightly acidified with acetic acid, as well as the juice of sour cherries, when left for some time in nickel vessels, take up considerable quantities of nickel, which confirms the view above expressed that acid solutions should be kept as far away as possible from all such utensils and vessels.

We may add that Dr. I. M. Da Costa has been experimenting with nickel salts for medicinal uses, and finds that they have some efficiency in doses of one or more grains three or four times a day. It does not produce the tonic effects of iron salts, but can scarcely be considered poisonous. The bromide can be substituted for other bromides, and in smaller doses.

Toothache Remedy.—A correspondent of the London *Electrician* gives the following as an instant remedy for toothache:—With a small piece of zinc and a bit of silver (any silver coin will do), the zinc placed on one side of the afflicted gum, and the silver on the other, by bringing the edges together, the small current of electricity generated, immediately and painlessly stops the toothache.

Hot Water in the Treatment of Colds.—Dr. George R. Sheppard, Hartford, Conn., says, in respect to the use of hot water as a remedial agent in the treatment of inflammation of the mucous membranes:—"I have used hot water as a gargle for the past six or eight years. In throat and tonsil inflammation, and in coryza (or cold in the head), if properly used in the commencement of the attack, it constitutes one of our most effective remedies, being frequently promptly curative. To be of service, it should be used in considerable quantity (a half-pint or a pint at a time), and just as hot as the throat will tolerate. I have seen many cases of acute disease thus aborted, and can commend the method with great confidence."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

FIFTH PAPER.—BAR, WAND, AND DUMB-BELL EXERCISES.

"You were very explicit, Charles, in pointing out the inelegancies of many kinds of pedestrians, but you failed to tell us *how* to walk correctly?"

"Well, it is frequently as valuable to have pointed out to us what to avoid, as then we are less likely to fall into such errors, as it is to have simply laid before us the strict laws to follow in walking; but as you desire, my dear sister, to know what to follow as well as what to avoid, I will formulate a few rules that should be followed by all who wish to walk gracefully and with ease.

"In the first place, feel that you are at ease, do not have unnecessary restraint over any muscle. Some persons, if they are deep in thought or in a desperate hurry, let their mind have such undue influence over the muscles and sinews of their arms and lower limbs that their body becomes bathed in perspiration through such tension on their nerves. To such a person, walking is a positive injury under the circumstances. You see a person rushing to catch a train; his fingers are clenched, his eyes dilate, his breath comes short and quick, and his legs trot along in jerky, quick steps, that really impede rather than advance his progression; for every now and again he puts one foot down too short of the pavement, and he jerks and stumbles, jostling his fellow-pedestrians right and left. With reddened face and beads of perspiration dropping from his brow, he arrives at his destination thoroughly exhausted and out of breath. He is 'knocked up,' and requires an hour's rest to recruit his exhausted energies; yet this exhaustion is not brought about so much by the distance travelled, or the quickness of time taken in performing it, but is principally due to the mental excitement as to whether he will lose or catch his train, and this mental anxiety is communicated to the nerves, constraining the muscles, whereby they do not perform their work in a legitimate way."

"This is all very well, Charles, but you have not yet told us what I asked."

"No; but I want to insist, first of all, on the absolute necessity of letting the limbs have their natural play, for then they will be able to easily perform the following simple manœuvres:—In the first place, do not keep your back upright, and as stiff as if a board were fastened to it to strengthen it, but let the body incline slightly to the front, not leaning forward, nor the head pointing forward, as if about to ram any one therewith. This mode was partly in vogue when the 'Grecian Bend' was in 'fashion' some years ago. The human body then, from toe to head, had much the crescent appearance of a new moon when the person was looked at sideways. The upper part of the body is inclined slightly forward, for this reason:—In the act of walking and running, the centre of gravity is removed from immediately beneath the trunk, and is brought somewhat to the front, because the lower limbs are thrust forward from beneath the trunk, and therefore to preserve the equilibrium the upper part of the body should also be inclined to the front. This may be made clearer to the reader by taking the case of a person rising from a chair. When seated, the whole weight and therefore centre of gravity of the body falls somewhere on the seat of the chair; consequently, in rising, the person leans forward to bring this centre of gravity over the knees, when the muscles of the legs permit him to rise up perpendicular without falling backwards, just as a corpulent person leans backwards to prevent his corpulent body pitching him forward.

"The best rule to follow in walking is, let the lower limbs be lifted upwards, and put forward easily. This is done by letting every extensor muscle be relaxed, and every joint mobile and free, while the whole weight of the body is thrown on to the stationary limb. To prevent the person leaning over outwards when this limb takes the weight of the body, the muscles of the limb are brought into use. This is easily shown thus, let the reader stand on one leg and raise the other, and advance it to the front or rear; if he have not learnt the balance, or goose step, he will naturally lean towards the outside of the leg he is standing on. The third point to pay attention to in good walking is to place the foot flat, but not all at once, on the ground. The heel is the first to meet the ground. It has been provided by nature with a hard, tough substance capable of bearing the shock or jar incident on striking the ground. The heel rests but a second, when the pressure is taken up by the ball and then the toes. If you attempt to walk flat-footed by dabbing down heel and toe together, the legs will strike and leave the pavement somewhat in the manner of a pair of crutches used by a cripple. If you attend a walking match, observe how the performers appear to dig or strike their heels into the ground, the toes appearing to point upwards. You must remember that in walking you are not moving by a succession of starts and pauses, but that the body is in a continual moving state, and that the easiest and quietest mode of progression will help not hinder this continual 'move on' of the body. Thus, when the right heel strikes the ground the body is slightly behind it, resting on the left leg, by the time the ball of the foot presses the ground the body is immediately over the right heel, and by the time the toes leave the ground, the body is leaning slightly forward over them, with the left leg just ready to be brought forward. For ease in walking, the arms may be allowed to swing in front and rear alternately with each leg, as this will prevent all restraint on the muscles of the arms. It is only the well-drilled person, however, who can keep the arms perfectly motionless and straight by the side; but for artistic grace such stilted and rigid appearance presented by the body is best avoided by means of a gentle yet undemonstrative swing of the arms, keeping, however, the shoulders steady."

"You recently* made some contemptuous remarks of people's idiosyncrasies in walking. How would it affect such persons were they to try and conform to the rules you have just set forth?"

"On that point I had better quote to you what Maclaren says, although I may premise that some improvement to their mode of progression will be made should the

* See "Second Paper," Health, No. 45.

Scott's Midlothian Oat-Flour.—Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

above simple rules be followed. However, this is Maclaren's observation :—

"'It is found than many men from organisation or habit have a mannerism, *i.e.*, a special mode of gait, action or preserving position, which although an error on *general* grounds, has, from such special causes, become serviceable to them, and which to alter would often be to reduce not add to their power. Where such distinctive mannerisms exist the aim should rather be to cultivate the natural capacities in their particular style of execution to its highest point.'

"In walking, I may add, that the breathing should be regular and the breath drawn through the nostrils, not through the mouth. Many 'colds' on the chest, and the first seeds of 'consumption' are frequently laid by inhaling a cold damp air directly on to the lungs, through taking it in through the mouth, whereas, by inhaling through the natural breathing organ, the nose, all dust is arrested by the hairs in the nostrils, and the air is warmed by its passage through various canals, before reaching the lungs. Now and again a breath drawn deep into the stomach affords a wonderful relief to the walker, owing to the expulsion thereby of the residuum of unexpired air that accumulates from every inspiration."

"Now that you have satisfied my curiosity, Charles, regarding how to walk properly, you will, perhaps, tell me what exercise you intend to put us through to-day?"

"Are you all ready?"

"Oh, yes, the girls* are waiting."

"Well, what I propose to instruct you in now is the 'Wand' exercise, but as you have no walking-sticks, and umbrellas are too cumbersome, I will lend you some of my disused insignia of idleness."

"What do you mean, Charles, by that?"

"Why, it is my term for a 'walking-stick.' You never see a business man encumber himself with a prop to propel himself along with, it is only idlers who use them; to such a stick is a boon, it keeps his hands out of his pockets, and the knob or handle afford him something to suck when he is at a loss what to do or say, like his empty-headed prototype, the sheep, which chews the cud even when not grazing, so the crutch-and-toothpick, pointed-toe exquisite stares at vacance and sucks his stick like a child would a sugar-stick."

"Sarcastic again."

"Nevertheless true. However, let us not do likewise. Occupy ourselves with something more useful. Go and collect the other girls, and I'll be with you with the sticks in a minute."

(*To be continued.*)

Dr. Holmes relates the following to illustrate the significance of small things in the sickroom:—"Will you have an orange or a fig?" said Dr. James Jackson to a fine little boy now grown up to goodly stature. "A fig," answered Master Theodore, with alacrity. "No fever there," said the good doctor, "or he would certainly have said an orange."

Remedy for Cramps.—A writer in the *British Medical Journal* declares that the elevation of the head of the bed, by placing under each leg a block of the thickness of two bricks, is an effective remedy for cramps. Patients who have suffered at night, crying aloud with pain, have found this plan to afford immediate, certain, and permanent relief.

* Perhaps it is as well to explain to the reader, that I adopt the supposititious case of talking *vivâ voce* to a class of girls, since such a supposititious case enables me to lay before my readers the otherwise dry details in a more interesting manner.

KNEE-BREECHES FOR LABOURERS.

Fashion, notwithstanding its caprices, is subject to the controlling influences of the sense of comfort and that of appearance. We may say that of these the former influence, on the whole, predominates in the dress customs of the male, and the latter in those of the female sex. On this hypothesis, one can understand how a desire for warmth, developing with the growth of civilisation, has led our countrymen, or most of them, as well as our Continental neighbours, to abandon various cooler and lighter, and even more wholesome, modes of covering the nether extremities, for that of our own day, which is probably as inelegant, and sometimes as inconvenient, as it is protective. We have left behind us the British kilt, the Saxon leg-swathing, the thigh-breeches, the knee-breeches, and have put on trousers. Ours is the century of long clothes. It may be questioned whether we have gained much by the change. Some, indeed, of our ancestral garments may, by this time, be too long out of date to be recoverable. The kilt and leg-bandage, for example, are separated from us, not only by centuries of disuse, but by differences of sentiment and occupation between our time and theirs, which must render their revival in any general sense well nigh impossible. The Elizabethan costume is in the same position; but the short clothes of the Georgian era still hold an established place among varieties of dress, though not that of the governing type. They seem to form the chosen habit of those whose lives abound in muscular movement. Thus they set the fashion of boyhood in the knickerbocker suit; they commend themselves to athletes, and especially to those of them who run much; farm-labourers often wear them; the infantry soldiers of more than one Great Power find them serviceable. Might they not be even more commonly worn in civil life than they are? We think so; and though we cannot here follow all the intricacies of an argument as to whether or not knee-breeches are, on the whole, more seemly and convenient than trousers, whether the use of the latter should not be conceded to the man of unshapely limbs, and so forth; still, it seems to us that in certain conditions, at all events, the elder costume might be adopted with advantage. Speaking broadly, we may say that all callings which entail much physical exertion would profit by the change. In particular, this is true of labour in the open air. In this form of work especially, where there is frequent and prolonged movement of joint and muscle, the weight of surplus clothing soon occasions weariness, and the surroundings are not the most cleanly. The labourer, if knee-breeched and gaitered, would be disencumbered of as much heavy moleskin or corduroy as would otherwise fall below the knee, a part of his clothing would not then as now flap about the feet to no good purpose, but to be soiled by the mire of his work, or in wet and cold weather to lead to illness by chilling or freezing on the legs. Gaiters of some close and not too heavy material might be worn over the stockings. They would be comparatively out of the way of dirt, would maintain warmth, would brace the muscles by equal and moderate pressure (a noteworthy consideration with men who are much on their feet), and if wetted might be easily removed and replaced by another pair. If some such reversion to a prior type were brought about in the dress of workmen, the change, being one of arrangement even more than of quantity of clothing, would enhance the comfort, facility, and effect of their exertions without prejudice to their health. It is at least suggestive that many workmen do endeavour by various devices, such as leggings, straw ropes, and the like, to make as little of their trousers below the knee as possible.—*Lancet.*

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Voice, Song, and Speech. A Practical Guide for Singers and Speakers, from the Combined View of Vocal Surgeon and Voice-trainer. By Lennox Browne, F.R.C.S.E., and Emil Behnke. (London: Sampson Low, Marston, Searle, & Rivington.) 1883.

(*Concluded.*)

It is in the section on the larynx that we find some cause for disappointment. The authors (or author?) are not satisfied with the nomenclature of the old anatomists, and have endeavoured to modernise the names of the cartilages and muscles. We are ready to admit that the names when first given were arbitrary; but long usage has so accustomed us to them that it takes some little time to remember where we are when we read of the "back" or "side ring-pyramids," "ring-shield" and "shield-pyramid" muscles. Doubtless in most cases they are but translations of the Greek names; but in their English garb they look strange. If there were any difficulty in understanding the scientific terms, surely the reader of such a book as Mr. Browne's and Mr. Behnke's is not so unlearned that he cannot refer to an etymological dictionary. Further, the continual recurrence of the new nomenclature will, we think, make it difficult for the ordinary reader to understand another work in which the old terms are adhered to. Still less do we admire the term "vocal ligaments" instead of "vocal bands" or "vocal cords." The arguments adduced in its favour are not convincing. With these exceptions, and a certain want of clearness in describing some of the laryngeal muscles, the section gives a very good account of the various parts, cartilages, muscles, cords, &c., which go to form the voice-box. In the next section the resonance apparatus, including the upper part of the throat, the mouth, and the nose, is described, after which the differences of the larynx in children, women, and men are explained. In women the organ is shown to be one-third smaller than in men; its cartilages are thinner and more delicate; there is no Adam's apple—the cartilage which forms it being rounded off instead of projecting, and the position of the organ in the throat is higher. In discussing the human voice as a musical instrument, our authors come to the very sensible conclusion that the larynx is neither a string flute-pipe nor reed instrument, nor a combination of them. It is, in fact, *sui generis.*

The chief physical cause of the division of voices into soprano, contralto, tenor, and bass is shown to exist in the differences of the vocal cords (or ligaments), these being relatively longer, wider, and thicker in the larynges which produce the low notes. The hygienic aspect of the vocal apparatus is then treated of, the faults of continued mouth-breathing and tight-lacing being especially emphasised. It is most important that in every circumstance in which it can be done, the proper passages, *i.e.*, the nasal, should be used in breathing. In speaking and singing this is not always possible; but, in almost every other instance, mouth-breathing can be avoided. In commenting on the evils of a tight corset, our authors quote at some length the excellent remarks on "Dress," by Mr. Bernard Roth. The deformity caused by tight-lacing, he points out, "occurs so gradually during years of growth, that the wearer is generally quite unconscious of having disfigured herself; and I have never yet met with a lady who owned to having a tight pair of stays. 'I can put my whole hand inside,' is the usual reply when I find fault with a patient. This is generally quite true; for, by drawing in the abdominal muscles, which act upon the anterior extremities of the ribs, by raising the diaphragm, and by slightly inclining the body forwards, the girth of the trunk can be still further diminished. The real test is to have the stays opened and all other constricting bands loosened, and to request the patient to breathe deeply and slowly a few times, with the arms directed upwards, if necessary, and then to ask her to fasten the *outer* dress alone while holding the body as erect as possible."

Ladies who think it necessary to wear a corset may be glad to learn that our authors recommend for their use a "hygienic corset." They, however, take the precaution of saying that if a woman has not worn stays in childhood, she may do without them in adult life. The material used may be "coutil" for those inclined to *embonpoint*, for others a light twill. The form should be that of a slip-bodice, buttoned, not laced, in front, with a strip of thin elastic webbing at either side under the arms, and a piece of whalebone, or very light flexible steel, on either side of the spine. "The waist and chest measure should be taken while the lady or child to be fitted is standing with head, shoulder-blades, and heels *all touching a wall*, the body being held very erect, and the tips of the fingers of each hand placed as far on the back of the shoulders as possible. Every woman should be able to fasten her under-bodices and dresses while standing erect against a wall. If once properly fitted, there is no rational excuse for tightening or for varying the calibre of a corset." The importance of attending to a proper and healthy mode of breathing is emphasised by the paraphrase of an old proverb, "Take care of the lungs, and the voice will take care of itself." The laryngoscope and its teachings are next explained. This portion of the work is illustrated by a series of diagrams and photographs showing the laryngoscopic appearances in the different registers. The photographs are the most successful that have yet been made.

The remainder of the book deals with voice cultivation, the daily life of a voice-user, the ailments of the voice-user, and defects in speech (stammering and stuttering). Certain exercises, the purpose of which is to teach the pupil to breathe correctly, and to enable him to have readily under control the various muscles required to alter the size or shape of the resonating cavity, are described and recommended. The faults of the stooping position so common to clergymen are dwelt on. They are easily avoided by a maintenance of the erect posture. In the "daily life of a voice-user" recommendations are given as to residence, ablutions, including baths, clothing, diet, exercise, and amusements. Ladies' dress is again brought up for discussion, and a special hygienic combination under-garment, made by Messrs. Ward & Co., Ilkley, is recommended. It "consists (1) of a special woven and shaded combination reaching from neck to ankles and wrists. This is supplied in three materials—silk-gauze, merino, and lamb-wool; (2) stockings drawn on *over* the combination. Garters are not usually required, as the stockings cling closely to the combination; but where any difficulty is experienced the stocking-suspender can be used. Next to the combination

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

is worn (3) a pair of knickerbockers, which reach to just below the knees, carefully cut to the figure, with no superfluous fulness. This garment can be made of almost any material, according to individual taste. The knickerbockers button at the sides, thus securing complete immunity from draughts and chills from changes of temperature; the entire weight should be buttoned to a bodice. (4) An ordinary petticoat bodice completes the underclothing." As to diet, the singer is advised not to take a meal immediately before he is called on to exercise his vocal powers. A number of articles are mentioned in order that their use may be avoided. These include the majority of root-vegetables, fat of pork and salted provisions, salmon and eels, nuts, hot peppers, hot pickles, and curries. Alcohol is neither entirely forbidden nor recommended. If used at all, it should be in the form of a light wine at the end of the day's work. The use of tobacco is left to the individual taste, but snuff taking is absolutely condemned. The ailments of the voice-user are treated of shortly, these being especially cold, sore or relaxed throat, clergyman's sore throat, elongated uvula, enlarged tonsils, &c. Excision of enlarged tonsils is recommended. "Louisa Pyne, Patti, Lucca, and others have undergone the operation, not only without injury, but with actual benefits." The faults which lie at the bottom of stammering and stuttering are next pointed out, and the best means of remedying them explained. We think we have now said sufficient to indicate the character of this book. It is a work well worth having, but the elaborate manner in which it has been got up makes it too dear to be as popular as we would like to see it.

National Health Society.—The Worshipful Company of Clothworkers has been pleased to grant a donation of £21 to the National Health Society, 44, Berners-street, W.

A Supposed Poisonous Seaweed.—In the summer of last year many cattle and hogs died in the vicinity of Waterville, Minn. Residents in the locality believed that the animals were poisoned by drinking the water of adjoining lakes. There are two lakes of considerable size in the neighbourhood; they are free from marsh, and have wooded borders; through them runs a somewhat sluggish river. At the time of the occurrence the lakes showed a quantity of dark-green scum on the surface, as well as disseminated through the water. The surface-layers of the scum were in places several inches thick. The scum proved to be a waterweed, having some characteristics like those of the nostoc, but is known to botanists as *Rivularia fluitans*, and has been described by Cohn, a European naturalist. The plant is spoken of by the author of this paper as a seaweed; he supposed it did not occur in this country elsewhere than in Minnesota, and it is not frequent in Europe. Last year Mr. Arthur visited the locality of the occurrence, and he repeated his visit this summer; but in each instance too late in the season to examine the scum *in situ*. It appears to be composed of innumerable small round bulbs of a transparent gelatinous substance, which are filled with a dark-green material. After they first begin to be seen on the water, the bulbs increase in number with marvellous rapidity. In about two weeks they begin to decay, and their entire disappearance quickly ensues. These phenomena take place usually in June. As no actual experiments have been made upon animals, the deadly qualities ascribed to the so-called seaweed are as yet a matter of conjecture, though the reported facts tend strongly to strengthen the belief that the plant is poisonous.

International Health Exhibition.

LONDON, 1884.

THIRD PAPER.

CLASSIFICATION OF EXHIBITS.

Division I.—Health.

Group 1.—*FOOD.*

Class 1. Selected Displays of Unprepared Animal and Vegetable Substances used as Food in various countries. Stuffed Specimens of Animals, Birds, &c. Models, Drawings, and Illstrations of the same.

,, 2. Prepared Vegetable Substances used as Food, including Tinned, Compressed, and Preserved Fruits and Vegetables. Bread, Cakes, and Biscuits of all kinds. Tobacco.

,, 3. Prepared Animal Substances used as Food in a preserved form—Tinned, Smoked, Salted, Compressed, and Prepared Animal Foods of all kinds; Food produced by Insects, such as Honey, &c.

,, 4. Beverages of all kinds—(*a*) Alcoholic; (*b*) Non-alcoholic; (*c*) Infusions (tea, coffee, cocoa, chocolate, &c.).

,, 5. New Varieties of Food. Food for Infants, Food for Invalids, New Concentrated Foods of all kinds.

,, 6. Cookery Practically Demonstrated. Economical Cooking, Workmen's and other Kitchens, Cheap Restaurants, Bakeries, Cafés, Foreign Cookery, &c.*

,, 7. The Chemistry and Physiology of Food and Drink. The Detection of Adulteration, Materials used as Adulterants, Analysis, Food Constituents and Equivalents, Tables, Diagrams, &c.

,, 8. Diseases due to unwholsome and improper food. Drawings and Models of Animal and Vegetable Parasites, &c.

,, 9. Practical Dietetics. Army and Navy Rations, Prison and Workhouse Diet, Foreign Dietaries, &c.

,, 10. Publications and Literature, Models and Diagrams relating to Group 1.

,, 11. Apparatus and Processes for Conserving, Storing, Conveying, and Distributing Fresh Food of all kinds.

,, 12. Machinery and Appliances for the preparation of Articles under Group 1.

Group 2.—*DRESS.*

Class 13. Collections illustrative of the History of Dress, National Costume, &c.

,, 14. Waterproof Clothing, India-rubber, Gutta-percha, &c.

,, 15. Furs, Skins, and Feathers. Dresses for Extreme Climates, &c.

,, 16. Dress for Sport, Hunting Suits, &c.

,, 17. Life-saving Dress. Divers' Dress. Fireproof Dress.

,, 17A. The Comparative Value of different Dress Materials for Articles of Clothing.

,, 18. Publications and Literature, Patterns, Statistics, Diagrams, Models relating to Group 2.

,, 19. Machinery and Appliances for the preparation o Articles under Group 2.

Group 3.—*THE DWELLING-HOUSE.*

Class 20. Dwellings, Models and Designs for the same, and Specimens of Buildings erected in the grounds. Fittings and Accessories for Dwelling-houses. Completely-fitted Apartments.

,, 21. Water Supply and Purification. — Meters, Filters, Water-Fittings, Cisterns, &c.

,, 22. House Drains, their Construction and Ventilation.—Sewer disconnection; Sinks, Traps, Gullies; the Disposal and Utilisation of House Refuse.

,, 23. Water and Earth Closets, Ash Closets, Commodes, Urinals, Disinfecting Powders and Fluids. Insect Destroyers.

,, 24. Grates, Stoves, Kitcheners, Ranges, Boilers, &c., for Domestic Use. Apparatus for Heating and Warming. Smoke Abatement, &c.

,, 25. Ventilators, Air Inlets and Outlets, Cubic Space of Rooms, Cowls, Air Straining and Cleansing.

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* *Special Notice.*—As Refreshments come within the scope of this Exhibition, all methods of preparing the same, whether by cookery or otherwise, and the display and sale thereof, will be matters of separate arrangement with those wishing to be represented in this section of the Exhibition.

Group 3.—*THE DWELLING-HOUSE* (*continued*).

Class 26. Lighting Apparatus.—(*a*) Electrical Apparatus for Illumination and Domestic Use, Secondary Batteries, Electroliers, Accumulators, &c.; (*b*) Apparatus for lighting by Gas, Gas Producers, Gas-Meters, Gas-Fittings, Chandeliers, &c.; (*c*) Oil and other Lamps; Mineral Oil, Wax, and other Candles, Vegetable and Animal Oils.

„ 27. Fire-Prevention Apparatus — Extincteurs, Portable Engines, Domestic Fire-escapes, &c.

„ 28. Materials for Sanitary House Construction—Roofs, Walls, Damp Courses, Solid Floors, Damp-Proof Wall-Coverings, Cements, &c.

„ 29. Materials for Sanitary House Decoration, Non-poisonous Paints and Wall-papers, Floor Coverings, Washable Decoration, &c.

„ 30. Objects for Internal Decoration and use in the Dwelling. Fittings and Furniture.

„ 31. Baths, Bathing Requisites, Public and Private Wash-houses, Washing Apparatus, Detergents, Appliances for Personal Cleanliness, &c.

„ 32. Publications and Literature, Models, Pictures, Diagrams, &c., relating to Group 3.

„ 33. Machinery and Appliances relating to Group 3.

Group 3a.—*AMBULANCE.*

Class 31A. Aid to Sick and Wounded in War. Transport. (*a*) *By Human Agency;* Stretchers, Litters, Dhoolies, Palanquins, Handcarts, Stretchers on Wheels. (*b*) *By Animal Traction;* Mule Litters and Chairs, Camel and Elephant Litters, Wheel Carriages. (*c*) *By Mechanical Means;* Railway Ambulances, Ship or Water Carriage. Treatment (with portable appliances and portable drugs). (*a*) On the Field. (*b*) In Hut Hospitals. (*c*) In Tent Hospitals. Naval and Military Hygiene.

„ 31B. Aid to Sick and Injured in Peace. Transport. (*a*) *By Human Agency;* Stretchers, Litters, Dhoolies, Palanquins, Handcarts. (*b*) *By Animal Traction;* for Accidents and Injuries, for Infectious Diseases, for Ordinary Sickness. (*c*) *By Mechanical Means;* Railway-carriages for Sick and Invalids, Water Carriage. Treatment (with appliances). (*a*) Hut Hospitals for Infectious Fevers and for Epidemic Diseases. (*b*) Tent Hospitals. (*c*) Hospital Ships. (*d*) Furniture and Fittings for Sick Rooms.

Group 4.—*THE SCHOOL.*

Class 34. Designs and Models of Improved Buildings for Elementary Schools, Infant-schools, and Crèches.

„ 35. Apparatus and Fittings for Warming, Ventilating, and Lighting Schools, School Latrines, Closets, &c.

, 36. Special School Fittings for Storing and Drying Clothing.

„ 37. School Kitchens and Arrangements for School Canteens. Methods of Warming Children's Meals, &c.

„ 38. Precaution in Schools for Preventing the spread of Infectious Diseases, School Sanitoria, Infirmaries, &c.

„ 39. Special Apparatus for Physical Training in Schools, Gymnasia, Apparatus for Exercise, Drill, &c.

„ 40. Literature, Statistics, Diagrams, &c., relating to Group 4.

Group 5.—*THE WORKSHOP.*

Class 41. Designs and Models for Improvements in the Arrangements and Construction of Workshops, especially those in which dangerous or unwholesome processes are conducted.

„ 42. Apparatus and Fittings for preventing and minimising the danger to health or life from carrying on certain trades. Guards, Screens, Fans, Air-jets, Preservative Solutions, Washes, &c.

„ 43. Objects for Personal Use. Mouth-pieces, Spectacles, Dresses, Hoods, &c., for use in certain unhealthy and poisonous trades.

, 44. Illustrations of Diseases and Deformities caused by unwholesome Trades and Professions. Methods of combating these diseases. Preservative measures, &c.

„ 45. Sanitary Construction and Inspection of Workshops, Factories, and Mines. (*a*) New Inventions or Improvements for ameliorating the condition of life of those engaged in unhealthy occupations. (*b*) Means of economising Human Labour in various Industrial operations.

„ 46. Literature, Statistics, Diagrams, &c., relating to Group 5.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," *74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

LETTERS TO THE EDITOR.

THE DRESS CONTROVERSY.

Sir, —"Circumstances alter cases," quotes Miss Ballin. Granted. The "circumstances" with regard to women's dress are: General ignorance, first, as to the internal economy of the female body; secondly, as to its true beauty of form; and, thirdly, as to what is, or is not, decent with regard to its method of clothing.

The "cases" arising from these circumstances are fashions of dress, first, which obstruct the healthy working of the internal economy of the body, and impede the free action of the limbs; secondly, which disguise the beauty of its form and substitute deformity in its stead; and, thirdly, which, by setting up conventionality as the standard of decency in dress, lowers the tone both of true modesty and of morality.

Both "the leaders of the rival camps of dress reform" are endeavouring to alter these circumstances, so that the cases may alter too. When this is accomplished, we shall hear no more of the beauty of the corset-made figure nor of the shoe-cramped foot; nor, I hope, of the remarkable decency of petticoats.—Yours truly,

. M. King.

Sir,—I have read with much interest the correspondence which has appeared in your valuable paper between Miss Ada S. Ballin and others on the question of dress, and I cannot but think the lady in question has been rather hardly treated by those who differ from her. In the first place, Miss Ballin is careful to point out that what is required in all clothing is *support* for all parts of the body, and not for the feet only, and this, moreover, without any undue pressure whatever. I do not see why parents can be blamed for seeing that their children's feet are put into boots which are at once a support and a defence against any unsightly outgrowth, any more than a gardener can be blamed for binding up and supporting the delicate sapling. Then, with regard to corsets, I think the question ought to be rather a tirade against rib-crushing than the actual wearing of corsets. There is a vast difference between wearing an easy, well-made, comfortable pair of stays, which will allow ample expansion of lung-power, and forcing one's waist into the regulation circumference of a fashion plate. Because there are poor misguided creatures who do this, and because there are also those who undergo something very like a daily amputation of the toes, in order to make "their feet beneath their petticoats like little mice peep in and out," I do not see why really sensible people should relinquish either their corsets or their boots—the one or the other.—I am, Sir, yours, &c., A Constant Reader.

QUERIES AND ANSWERS.

GENERAL.

Ibrax.—See Mr. Matticu William's "note" in Health No. 47.

Toledo.—The spleen is a blood-gland, and is concerned in the elaboration of the elements of the blood. It increases in size towards the end of the process of digestion.

E. N. O.—Rest assured there is no danger in the course referred to.

B. Upton.—About 98·5° Fah. or 99°. Varies with food, exertion, &c.

Alga Marina.—See article on "Consumption" in No. 47.

Cecil George.—1. Cercaria is a small worm-like form, the early stage of a fluke. 2. "Cystic worms" was the old name for the imbedded "Scolices," or larvæ of tapeworms. 3. The trichina is not a tapeworm in any sense.

Brother.—Casein occurs as the nitrogenous part of milk.

Antiquary.—1. The legend of the child's caul (often advertised still for sale as a protection against death by drowning) is, we

believe, unknown—*i.e.*, as to its exact origin. 2. No part of the frog is used in medicine. Its hind legs are delicious, properly cooked. 3. You will find the information you seek in Miss Phipson's "Animal Lore of Shakespeare and his Contemporaries" (Kegan Paul & Co.).

Onto.—Yes, as stated in Dr. Wilson's first lecture at St. Leonard's on "The Skeleton," the limbs of all vertebrate animals are built upon one type. A man's arm, a bird's wing, and a horse's fore-leg are thus modifications of the same type.

F. B.—You will obtain the information you require by consulting *The Student's Numbers* of the *Lancet*, *British Medical Journal*, and *Edinburgh Medical Journal*, which are published in September or October of each year. Procure and study last year's numbers.

Puzzled.—1. The temperature varies within certain limits (say from 98·5 to 99·5) even in health. Any text-book of physiology will teach you as much. Certain individuals, from constitutional peculiarity, exhibit greater variations (in health) thon others. But food, exertion, mental condition, &c., and state of health, all have an effect on the temperature. The variation you name (from 98·5 to 99 deg. or so) is neither here nor there, and may possibly be normal in the case you allude to. 2. See article on "Consumption," in No. 47. The acute consumption, in the case you name, may, of course, have been developed entirely independently of the wife's affection.

SANITARY.

Torsk.—No objection to the use of "Chloralum" whatever. Both that and "Sanitas" are efficient, and want the (to many) nauseating smell of carbolic acid.

A. T.—You must disconnect your waste-pipe entirely from the closet drain. The sketch you enclose shows only an ordinary U bend (which, as a trap, is useless) between your hand-basin and your main-pipe. This is an antique style of plumbering responsible for much illness.

B. T. S.—Have the water analysed. Nothing short of this can satisfy you.

Ongar.—Possibly the sediment is only mineral matter. There is no evidence of organic contaminatien.

Riza.—Due to foul air. Have ventilation seen to.

Express.—About 40 ft., we believe.

N. G.—Important, and should be seen to by an experienced plumber at once.

Householder.—Do away with the old "pan" closet and fit in a "wash out" or other good make. The smell will then disappear. The pan always gets foul.

Paraffin Oil Lamps (J. S.).—If ventilation of room is *thorough and complete*, there should be no danger from these lamps. But they are very notable sources of air-contamination all the same, and should be avoided in sleeping-rooms. Recently we noted the death of two boys from breathing the air in an ill-ventilated room in which a paraffin lamp had been left burniug.

Catford.—Of course, a cesspool so near the house is always a slight source of danger. We should recommend your strict watching of the cesspool; have it flushed and cleared frequently (are you sure there is no chance of any *backward* flow of gases from cesspool ?). Otherwise your arrangements seem sound enough—one great point being that you have no drains under your basement. The separate cisterns are good; but look to that "open ditch" you speak of which receives surplus water. If near the house, have it seen to, as it may become foul. If all drains and "w.c.'s" are properly trapped, there is nothing to recommend—save that we think you should see to that disused scullery w.c. It is always a possible harbour of or exit for gases from the drains.

MEDICAL.

Endymion.—Presuming that you are a "male person," we should say have your hair cut short and keep it so, or moderately long. "Æsthetic hair" simply attracts foreign matter and becomes a kind of dust-bin. 2. There is no better dentifrice than camphorated chalk.

Capillary.—1. You might try a cautious experiment in the way of adding a little fish or rich soup to your diet. 2. The sensation you describe may proceed from wax in the ears. See to the condition of the ears. 3. No; at such an interval what you name cannot be injurious.

R. Morland.—You should read Mr. Carpenter's Articles in Health on "Electricity," also recent articles describing Electrical appliances. The test you name (that of decomposing water) is a good test. Quack electrical appliances cannot do this. 2. Such as we have seen are electrically useless. 3. The person you are going to see will tell you whether or not your belt is "electrical" in the true sense. If not satisfied, send it to us and pay carriage to and fro. 4. If you like to be at the expense of an action against the vendors of the belt, do so by all means. You would have to call scientific evidence, and if you care to do this, we can supply you with the names of persons who would electrically test your belt. The sham electrical swindles deserve exposure. We have done our best to warn the public against them by publishing articles on electrical apparatus.

G. P.—About a tablespoonful to a pint of water. Might be increased if necessary.

Victoria.—Yes; eggs are fattening. Salad not so, save for the oil taken with it. No exertion should be undertaken immediately after meals.

Baritone.—We do not understand you. You require a list of teetotal drinks, and then you specify claret, sherry, &c., which contain alcohol. We should say you would find a little *really good* claret and water as safe a beverage as you could desire. It contains only a small percentage of alcohol.

H. Filer.—You are replied to in No. 47. Read our "Notices to Correspondents," and you will see we cannot reply in the same week as that in which your letter was received.

J. Jackson.—Wash the head with soft tepid water and Pears' Soap twice a week. Avoid using a hard brush or small-tooth comb, and rub in a little Vaseline each night, to which your chemist should add a small proportion of borax.

A Cardiff Subscriber.—You had better continue the oil for a few weeks yet. Better to do without stimulants, but, if needed, try how Bass's bitter ale agrees with you.

Senex.—Depends on individual constitution, health, &c. You must judge by effects. If in good health, we should say not injurious.

Banffshire Keith.—Yes; such children may live and thrive. You had better have the child under the doctor's eye. Cow's milk should be slightly diluted with water if used for feeding children.

A Student.—You are clearly overworking yourself; and you fast too long between breakfast and your next meal. We note with surprise that you do not take any dinner. In addition to overwork you are underfed. Tea contains no nourishment. Unless you have a good meal at midday you will suffer for your work, and all your labour will be thrown away on an unhealthy frame. Work less, eat more. Diet to be light and generous, and more open-air exercise. Yours is a case for diet, not for drugs; and all your symptoms are those of physical weakness.

Andrew Parler.—Yours is a case in which we should strongly advise you to apply at your nearest hospital or dispensary, and undergo a thorough medical examination. There are certain symptoms in your case which render a visit to the doctor absolutely necessary.

Sincerity.—Try the lime powders ordered to "Alga" in Health, No. 45, and if not better write again.

Dunedin.—Cold sponging every morning; sleep on a hard mattress; no stimulants; no fluids to be taken late at night; good, light, and nourishing food; open air exercise; and a teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily, before food, in a little water, for a short time.

Repentance.—See advice to "Dunedin" above. Don't be morbid.

Saxhorn.—Give cod-liver oil or "cod-oil emulsion" (a dessertspoonful thrice daily after food), and have added to it a little syrup of iodide of iron (about 3 drachms iron to 6 oz. of oil). When the cough is troublesome inhale the steam arising from a pint of hot water to which a teaspoonful of "Friar's Balsam" has been added. Take care of cold after inhaling. The cod-oil is the sheet-anchor of treatment.

A. Spencer.—Doubtless your cold, together with the constipation account for your symptoms. You should leave off taking the tonic, (which is not meant to be taken continuously). Take a little "Æsculap" water as an aperient in the mornings for a time; and include vegetables and fruit in your dietary. For the throat trouble, inhale the vapour of a pint of hot water to which 20 drops tincture of iodine have been added, taking care of cold thereafter. Glad to be of further service if need be. 10 drops *Fer Bravais* in water thrice daily might be also tried for a time.

Russell.—Nothing can be done for the teeth; but you might try the following mixture: iodide of potass, two drachms; infusion of calumba, six ounces, a dessertspoonful thrice daily. For the hair, try the following: balsam of tolu, 2 drachms; oil of rosemary, 20 drops; tincture of cantharides, 1 drachm; castor oil, half-an-ounce; prepared lard, an ounce and a-half. Mix; label, "for outward use—the hair lotion." Rub in morning and night to the roots.

Emigrant. The tonic is well known in the States. By following directions given to "Dunedin" above (not taking the tonic continuously) you may emigrate with safety. The sea voyage will do you much good.

Patience.—See and follow advice to "Saxhorn" above.

An Anxious Inquirer.—(We do not reply to inquiries by post save in exceptional circumstances.) Try painting the spot with ordinary (*not glacial*) acetic acid. If that does not suffice, try a lotion of hyposulphite of soda, two drachms; glycerine, four drachms, and rose water to make up four ounces. Write again if not cured.

C. R.—Try the following: sulphide of sodium, 3 drachms; lime, 10 drachms; starch, 10 drachms; mix. In using, exercise care; mix with water to make a paste, apply to the parts for two minutes, and then scrape off.

Malida.—Exercise commonsense and restraint. No tonic can act as a spur or stimulant if you persist in undoing its work. Try the tonic recommended to "Dunedin" above; but do not use it continuously, or for any length of time.

W. A. H.—In Scotland, Rothesay and other sheltered and warm Clyde resorts; in England, Bournemouth, Hastings, St. Leonards, Eastbourne, Dawlish, &c. See Health for last year (Vol. I.) for full descriptions of all health-resorts in Great Britain. You require a warm, sheltered, and moist air.

Jennie.—If you follow our advice, you will begin at once and through all the spring, and in each succeeding winter and spring, take small doses of cod liver oil after food, daily. Thomson's "Cod Liver Oil Cream" (to be had from the maker, Dublin-street, Edinburgh, or in London—see our advertising columns) is a preparation which would suit you. In this way you would brace up your system during the cold weather, and a summer residence at a southern resort (Bournemouth, for example,) would also do you good. For the head cold try sniffing "Alkaram," or inhale a little iodine vapour, as recommended to "A. Spencer," above. If your general health can be got above par, your other complaint will likely leave you. Glad to be of any further service.

Proboscis.—"Be content with such things as ye have"—including your long nose. We say this in all seriousness. You would be very foolish indeed to try any "nose machine." Who told you your nose was "too long?"

Magna Charta.—1. Try a little *good* claret and water instead. Beer is not advisable. Claret, if good, will benefit you. 2. Don't be anxious about nose breathing. In time, by habit, it may become easier to you. Yes; by all means have Hincke's Bird's window-block tried. Your room is not too large for one. 3. No harm in having the warm bath in your room. "Of two evils choose the lesser," and the lesser, in this case, is having a little steam in the room—the greater being risk of cold by having the bath elsewhere

Zanoni.—You send us a parcel of broken herbs and ask us to tell you the names of the herbs and relative quantities. From the nature of your request, it is clear you have no adequate notion of its magnitude. We desire to aid our correspondents in every way, but what you ask involves a botanical examination and a chemical analysis. Send your parcel to an analytical chemist, or ask the herbalist from whom you obtained the packet. Our time is much too valuable to be spent in such an inquiry.

T. E. G.—Try applying pure vaseline at night for a week or two, and avoid chills. Write again if not bettered.

Dens.—Attend to your teeth. Use camphorated chalk, with a soft, broad brush, as a dentifrice, and allow a chlorate of potash lozenge to dissolve in your mouth once or twice a day. A mild aperient may also assist you. Try "Æsculap" Water.

Vulcan.—Consult a good surgical instrument maker, who will show you the best kinds. Glad to send you London or other addresses of such, on receipt of stamped addressed envelope.

Sedentary.—We think, when the attack threatens you, you should take an aperient; avoid all solid food, and rest. Light puddings, fish, &c., should thereafter be taken. Attention should be paid to the condition of the bowels, without which attention it is hopeless to expect to ward off these attacks.

A. M. H.—You ask us to repeat a prescription. As you give no indication of the prescription you wish, or of the circumstances under which it is required, we cannot comply with your request. Kindly re-state your wishes fully.

Hope Deferred.—Attend very carefully and regularly to the bowels. It is possible that when your general health is restored your complaint may disappear. Try the effect of leaving off all stimulants, and of drinking freely of potash water only; and let us hear how you are in a few weeks.

J. D.—By all means have the tooth out. There is no more frequent cause of neuralgia than decayed teeth. In all probability, by aid of a little tonic after the visit to the dentist, the general health will improve rapidly. Glad to be of further service, if need be.

F. M.—Yes, we have heard of the preparation, and have seen it also. We have no faith whatever in it. Phosphorus cannot be so combined in a free state. Fellows' "Syrup of the Hypophosphites" (a teaspoonful thrice daily, before food, in a wineglassful of water) is infinitely preferable, and is a thorough nerve-tonic of the highest class.

Mental.—See to your general health. Leave off all mental work for a time; go to the country; take complete rest; and you will find your mental powers renewed through physical improvement.

Evelyn.—See to your teeth. Follow advice to "Dens" in present number. Eat Bragg's "Charcoal Biscuits" occasionally, and take "Æsculap Water" as a mild aperient. If not better, write again.

Pessimist.—Don't be morbid. There is nothing wrong with you. Simply use cold sponging, sleep on a hard mattress, take plenty of open-air exercise, food to be light but nourishing, no stimulants, and for a time take the tonic recommended to "F. M." above.

A "Desirer" of Health.—See advide to "Pessimist" above; you do not, however, require the tonic there recommended—you only suffer from a little indigestion. Don't eat late at night; make a change in your food, which should be light and nourishing. Rest after your meals, and take "Pepsine" with the food for a time.

Eyesore.—Use a little Vaseline to the lids at night. Avoid writing or reading by gas-light for a time, and see to the ventilation of your rooms. Give up tobacco, and let us hear how you are shortly.

Alice Bartin.—All your symptoms point merely to a nervous state. Our advice to you is precisely that given to "Mental" above. Drugs are of no use in your case. You want fresh air and change for a time.

J. E. Acott.—1. We should certainly advise you to give up band-practice. It is evident it is too much of a strain upon you. 2. No instrument can cure your speech-impediment. Try the plan of slowly *singing* your "R's." This may help you towards pronouncing them, and may form the habit of easy speaking.

S. Rogers.—1. See to the general health, and to the teeth especially. As a tonic, you might try that recommended to "F. M." in present number. Guard against cold and chills. 2. The tonic above named may cure the excessive perspiration, which is a sign of general weakness and of the health being below par.

Courier.—You suffer from slight indigestion. See to your teeth especially; rest after your meals; don't eat late at night, and try a little "Pepsine" with your food.

A. M.—See advice to "Courier," above. You might take after food (instead of the "Pepsine" above ordered) a powder consisting of four grains powdered rhubarb and three grains "Pepsine." Rest after meals is a *sine quâ non* in your case.

J. F. Hopwood.—Nothing to be alarmed about; only indicative of a little weakness, which will give way to cold sponging and free exercise. Give up stimulants and drink potash water for a time only. Write again if not cured. See to the condition of the bowels.

Housewife.—See (and follow) advice to "Courier" and "A. M.," above. Glad to assist further, if necessary. Food to consist for a time of soups and fish only. Give up tea and coffee.

Beta.—Try the effect of a vegetable dietary, in part at least. Eat fruits, &c., and let your diet be very light for a time. You do not require any "belt," at present at least. Yours is a case for wise regulation of diet. Take more open-air exercise, and a little "Pepsine" with your food. Let us hear how you are shortly.

Ninon.—1. The sulphate of iron you enclose is right, but such a dye, we are of opinion, would injure your hair. It is a crude dye. 2. Use a little prepared pumice-stone in washing the hands, and use also Pears' soap and tepid water. Avoid chills. 3. Rain water is good, but ordinary tap water should suit. 4. Add Tidman's "Sea Salt" to bath. The cold bath is merely a stimulant, it is not a cleansing measure. Don't use any "vinegars"—all useless. 5. The freezing process is effectual in preventing pain. 6. No tonic is needed in spring if general health is attended to. (Queries not so numerous in one letter again, please.)

A. B. C.—Yes; the electric belts you name are of service in lumbago. Clothe warmly across the loins in addition to using a "belt."

Enid.—Don't take aperients. They are hurtful in your case and are of no service. Try the lime powders ordered to "Alga," in Health No. 45, and, if not better, write again. Send address of the medical man to whom you refer, and we will let you know. Limit your tea by all means.

Lebay.—In such a case, we should advise the application of electricity carefully supervised by a physician. We think (for the sake of the boy's future) you should see a London physician accustomed to treat nervous diseases. We can send you address of such on receipt of stamped addressed envelope.

Folly.—See and follow advice given to "Dunedin," in present number of Health. By attention to these details you will get quite well. We gather from your letter, there is really not much wrong with you. Don't get morbid, seek cheerful society, and take plenty of outdoor exercise.

[*Continued on page* 368.

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B. E. M.—We know nothing whatever of the remedy to which you allude but a perusal of the circular you enclose is more than sufficient to show us that it is a thorough quack production, and like all such makes pretences much over its powers.

A. O. J.—Do not be morbid. There is nothing whatever wrong with you and by following the directions given to "Dunedin" in present number you will entirely recover your vigour.

Hygeia.—We do not think that there is anything serious in the skin disease you describe. We should strongly advise you to watch your digestion carefully, and to make vegetables and fruits prominent articles of your dietary. When the affection becomes irritating, we should recommend you to try a lotion composed of bicarbonate of soda 1 drachm, glycerine 1½ ounces. You might also try the effect of taking 15 drops *Fer Bravais* in water thrice daily for a time. Look well to the condition of your bowels, and avoid chills. Glad to be of further service, if necessary.

T. Y. C.—We think you might with advantage sponge the perspiring parts with a little boracic acid solution. A tonic is also indicated in your case. The following will suit you:—Citrate of iron and quinine half a drachm, extract of gentian half a drachm, to be made into twelve pills, one to be taken twice a day.

Marital.—We think yours is simply a case for cold sponging, as well as for care and moderation. Whatever tends to make your general health good will better your condition. Do not be nervous, but simply exercise care. Glad to be of any further service.

W. C. H. G.—You suffer from a form of acne for which we should recommend you to press out the glands whose secretion resembles worms. Wash the face with Pear's Soap, and then rub thoroughly with a rough, soft towel, thereafter applying toilet vinegar or a strong solution of alum. Your general health should also be strictly attended to.

J. T.—The hair varies with the individual, and what may be good or necessary for one is not adapted for another. Many persons require to use some simple pomade, on account of hair dryness. Try Rowland's Macassar Oil. 2. We do not believe in soap as a dentifrice. We recommend camphorated chalk, which cleans the teeth and purifies the gums as soap cannot do. 3. Braces are preferable to a belt. Try the Argosy or Armstrong braces. Common leather or elastic braces should never be worn.

H. T. W.—1. You might consult Dr. Wilson's "Standard Physiology," published by Chambers, or Huxley's "Physiology," published by Macmillan & Co. 2. Rest after food, and take a powder after meals, composed of powdered rhubarb four grains, Pepsine three grains. A litttle Æsculap Water taken in the morning would be found to relieve most of the symptoms of which you complain.

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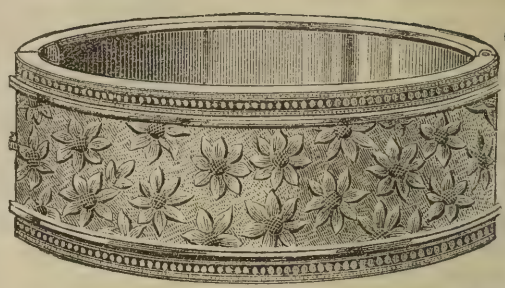

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• HEALTH •

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 14, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

In connection with the subject of cremation, which Mr. Mattieu Williams recently discussed in a note contributed to Health, it may be of interest to note that Sir Spencer Wells, the famous surgeon, writing concerning this practice says, the "Cremation Society of England" is ready to place its furnace (or "crematorium") at the disposal of those who desire this means of converting the bodies of their friends into dust. The action of the society is founded on the recent decision of Mr. Justice Stephen in the Welsh case, that cremating a body is in itself not an illegal act, provided it be carried out so as to avoid all nuisance. Those persons who may favour this practice of disposing of the dead have therefore an opportunity of having their wishes carried into effect. In many cases we are persuaded the want of cremating apparatus has prevented those who approve of this method of "burial" from fulfilling the wishes of diseased friends. Cremation, in truth, as a substitute for burial, has never had a chance of submitting its claims to public favour. To argue that the nation is against cremation is absurd, since, as a rule, people have had no means of judging of the merits or demerits of the practice.

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We frankly confess that, to our mind, cremation is the *beau ideal* of a sanitary practice. It disposes easily, quickly, and decorously of the dead body. It destroys all chances of the propagation of infectious diseases. Think, in face of the "germ theory" and its revelations, what a mine of infection every cholera-laden cemetery must be! It prevents pollution of the soil. It conserves the interests of the living, while it deals tenderly and respectfully with the dead. It would save acres upon acres of valuable land near cities from being rendered permanently useless for the living; and lastly, it would tend to simplify all the needless ostentation and high expense which attends the modern burial rite. Questions of sentimental kind—which we are very far indeed from despising—will, undoubtedly, enter into the consideration of cremation *versus* burial. But the good sense of the public, which, after the full discussion of any theme, is usually guided to a safe issue, would, we are persuaded, decide in favour of cremation. If we may be permitted to say so, all questions of sentiment in favour of burial, must surely give way when we reflect that as things are, there is no "earth to earth" principle involved in ordinary burial practices. In face of the "corrupting mould" of the ordinary burial-place, there are few we are persuaded to whom the idea of cremation is not infinitely preferable to that of burial. And, as we have remarked, it is by cremation alone, that many health-questions which press so hardly upon us in these modern times, can be fully and readily solved.

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Dr. Cameron's Bill to regulate the practice of cremation will be brought before the House of Commons next month. It is backed by Sir Lyon Playfair, Sir John Lubbock, Mr. Howard, and others. One interesting fact remains to be noted, namely, that in Italy, clerical opposition to cremation has ceased. In Milan, 130 bodies have been cremated within the past two years. In Rome, the practice is steadily on the increase.

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The prospectus of "A Society for the Enforcement of Sanitary Laws and the Improvement of Dwellings" is published in the *Nineteenth Century* for the present month. The Committee consists of the Baroness Burdett-Coutts, Miss Octavia Hill, Lord Shaftesbury, Lord Dunraven, Sir Richard Cross, M.P., the Right Hon. G. Shaw-Lefevre, M.P., Mr. Samuel Morley, M.P., Mr. Burt, M.P., the Rev. S. Barnett, Mr. H. O. Arnold-Foster, and Mr. James Knowles.

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The main feature of the Society's *locus standi* is that of enforcing the provisions of existing sanitary laws. In this respect the society has a firm and rational basis. It does not wait for future legislation, but maintains, rightly enough, that most of the evils of which the poor complain can be remedied by laws at present in operation, but too often unknown or unacted upon. Influence and personal aid are wanted rather than money, a feature which should at once place the society in a highly favourable light before the public. The hon. secretary is Mr. James Knowles (of 17, Albert Mansions, Victoria-street, London, S.W.), who invites "information, authenticated by names, dates, and addresses, as to any particular cases of hardship or misery (in London) which are traceable to evasion or neglect of the existing law." Here is a chance for the practical emendation of sanitary evils which we trust may largely be taken advantage of by all interested in the improvement of the London poor.

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The important question, "Can any system of filtration of water be depended upon for the destruction of disease-germs which may be therein contained?" is ventilated in the present number of Health, in a letter from the "Spongy Iron Filter Company." We have expressed the opinion, that no system of mere filtration can *destroy* disease-germs—that nothing short of actual chemical destruction of such germs could render germ-laden water harmless. We have asked our correspondents to favour us with any evidence they may possess, regarding the destructive powers (on germs) of any system for filtering water. We shall publish such details in full, should they be submitted to us. At present, filtration may, and does certainly accomplish a very great deal in the purification of water, by removing particles of foreign matter and by clearing water from mud and other extraneous materials. But to actually destroy living germs—say of cholera or typhoid fever, which are propagated by water—measuring

the five or ten-thousandth or so of an inch in diameter, something more than mere filtration, as commonly understood and practised, is clearly required. We may raise "the battle of the filters" over again, it is true; but if we can induce the filter-makers to supply the public with evidence of the advantages of their inventions, so much the better, both for the public and the filters.

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A correspondent of the *British Medical Journal* gives the following highly-illustrative case in support of the protective influence of vaccination:—In July last the correspondent was called to see a lady suffering from small-pox. Her husband and three children were unvaccinated. The father and two elder children were vaccinated when the eruption had appeared on the mother, but the youngest child was left unvaccinated on account of its delicate health. The results were that the mother made a good recovery; that the unvaccinated child died from small-pox on the fourth day of the eruption; and that those who were vaccinated escaped infection entirely. Anti-vaccinators will kindly make a note of this case, and explain away the protective influence of vaccination—if they can.

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We are glad to observe that at a recent meeting of the Paddington Vestry, a committee was appointed, on the motion of Mr. Mark Judge, to provide suitable lavatory accommodation for both sexes in every part of the parish. That such a movement will supply a long-felt want, and that it is, moreover, a health-reform which deserves to be imitated in every city and town, goes without saying. There is no city worse provided in such matters than London itself; but of most other towns the same remark may practically hold good.

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The question of "over-pressure in education" is not, it seems, to be allowed to lapse into oblivion. The *Lancet* has a timeous leader on the subject in its last issue, and therein quotes a pregnant remark, emanating from Sir Andrew Clark, that 10 per cent. of the youths who compete for places in the Indian Civil Service became affected with albuminuria—a very grave kidney-disorder. "Enough is known and seen every week," says our contemporary, "by medical practitioners to prove that schools may make or mar the future of children to an extent which brings them into the front of sanitary influences. The problem for statesmen is to arrange public education so that it shall be a physical as well as an intellectual gain to the nation." We recommend our contemporary's words to the thoughtful reflection of statesmen, teachers, and parents alike.

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An interesting piece of information has recently been communicated to the Academy of Sciences by M. Pasteur. That distinguished scientist stated that *rabies*, or canine madness, could be communicated to a healthy dog by inoculating it with marrow or nerve-tissue taken from a rabid dog. As *rabies* is the canine disease which produces hydrophobia in man, the importance of the discovery can readily be estimated. M. Pasteur further stated that he had rendered twenty dogs proof against *rabies* by inoculating them with the poison of the disease, which poison, however, had been modified by cultivation. Something of the same kind was performed by M. Pasteur in the case of the "splenic fever" of cattle—as was fully described, indeed, in the articles on "The Germ Theory" published in our first volume.

Original Essays

"Life is not to live, but to be well."—*Martial.*

DISEASE GERMS AND THEIR RELATIONS.

By Dr. H. Fol of Geneva.

(Translated from the *Journal de Genève.*)

None of the living substances which form an essential part of our sustenance, and are useful in a thousand ways, can be kept for more than a few days—fermenting and spoiling, they are the despair of the economists. In this process of decomposition, the substance becomes filled with an immense number of very minute living beings. How can a liquid like milk or soup, free from all outside germs, become invaded in a few hours by these innumerable legions of germs? The first theory suggested is, that all these living particles are the *result* of the decomposition, and that they are produced spontaneously (*i.e.*, without parent-germs) at the expense of the altered substance. This is the theory of "spontaneous generation," so vigorously maintained by Pouchet; and it is certainly one of the greatest of Mr. Pasteur's good offices that he has refuted one by one the arguments of the supporters of this attractive theory, and pursued them to their last defence with his invincible logic and his unexceptionable experiments.

The fermentation is produced by the germs or *microbes*, as they have been called; and these, by a wonderfully rapid propagation, are derived from germs carried by the air, or adhering to the vessels which hold the fermentable liquids. The diligent researches of M. Miquel show that the comparatively pure air of the suburbs of Paris holds from a hundred and fifty to a thousand living germs per cubic mètre. In a hospital at the centre of the capital, each cubic mètre of air contains from five thousand to thirty thousand, according to the season. Although these figures appear prodigious, they are nevertheless very small, compared to the number of germs which cling to all the solid objects surrounding us. A simple cleansing is powerless to remove them; only fire or strong disinfecting solutions can destroy them. A fermentable liquid can be preserved indefinitely if it is protected from all microbes; but it is easily seen, after what we have just said, how difficult it must be to obtain this perfectly protected state. All these lower vegetable types are found in two forms—1, the vegetative or active form; and, 2, the passive form, that is, the *spores*, which play here a part analogous to that of seeds in plants.

In the active state most microbes show little endurance. Many species cannot stand a drying of any duration; and in moisture a temperature of 70 deg. to 80 deg. C., continued for two or three hours, destroys them almost without exception. The spores or young forms are more hardy; boiling water does not kill them; but, for this purpose, water must be heated to 120 deg., 130 deg., and even 150 deg. When dry, the spores do not succumb to a temperature below 180 deg. to 200 deg.; and, according to Mr. Fricz, cold of 110 deg. has no effect upon them. To disinfect clothing without burning would, then, be an impossibility, if, fortunately, Mr. Koch had not discovered that the germs cannot resist the action of a continued current of steam at a temperature of 100 deg.

It is peculiarly difficult to protect a liquid from all germs, or to destroy all those which have penetrated it; however, it is possible, and the liquid is then said to be *barren* or sterilised. Certain soups are so prepared that they may be sown with very small particles of substances con-

taining the microbes to be studied; and thus the desired species obtained, to the exclusion of every other. Laboratories devoted to these studies annually distribute very large quantities of these soups.

The organisms which here claim our attention belong to three families, all allied to fungi — *moulds*, *yeasts*, and *microbes* proper. Each kind of fermentation is produced by a certain species of these small organisms, and takes place, only if the species in question is present in the liquid, from the beginning of the fermentation, in sufficient numbers not to be choked by other species. Thus the special plant or fungus of wine is found in abundance in the flower of the bitter grape, and is naturally scattered in the "must" which flows from the press. In Japan the vine grows with wonderful rapidity, and bears magnificent grapes; but the fungus is lacking, and the fermentation produced by the other microbes yields only an undrinkable liquid. Bakers and brewers know very well how to introduce into their dough and must the species needed. Without microbes milk would not curdle, cheese and vinegar would be unknown; the vegetable *débris* would not decompose, and there would be no loam. Some one has calculated that a gramme (about 16 grains English) of soil contains a million of these little creatures. We are so accustomed to associate the word "microbes" with the most dreaded diseases, that we lose sight of the important part they play in nature. We can confidently say that their suppression would completely overthrow the present order of things.

The power of causing fermentations is certainly one of the most curious phenomena which these lower vegetable types present. This power belongs only to certain species. Mr. Pasteur was the first to discover that certain microbes live in the air and breathe like animals: these do not produce fermentation. Others live only when protected from the air, and cause fermentation in the matter which contains them. To these two classes there has recently been added a third, amphibious microbes, simply vegetating while in the air, and producing fermentations only when the air is withdrawn. Fermentation thus seems to be a kind of respiration or breathing. The yeasts decompose liquids in order to obtain products rich in oxygen, which take the place with them of respirable air. These facts are highly important in explaining the mechanism of diseases.

(*To be continued.*)

STORIES OF SCIENCE AND CRIME.

EIGHTH PAPER.—A WONDERFUL CASE OF STARVATION.

The following case, given by Dr. Cutter, of Boston, is extremely interesting. We quote Dr. Richardson's account of it, and also present figures of the Ainos race, referred to in the account:—

The Ainos, the Indians of Japan, are stout, thick-set, very hairy, and with very marked muscular development. They take very little sleep. Their digestive and assimilative powers are most excellent. They require only half as much rice per day as the Japanese coolie (about three-fourths of a quart instead of a quart), and, without making it up with fish or meat, the Ainos will do more, and endure more hardship. Upon such a diet they will carry two-thirds of their weight on their backs; will cover eighteen to twenty miles per day through swamps and over hills; will continue such exertions for a series of days, and yet keep their condition under the influence of an atmosphere surcharged with moisture on a July day.

The Japanese boatman, on a diet of boiled rice and weak tea, with a kind of pickled radish, not unlike dock-root, for a relish, will row or pole for hours without intermission; upon a similar diet, with an occasional bit of dried fish, he will whirl you along in his two-wheel "Pullman" at the rate of four to seven miles per hour. These men have been known to draw an adult Japanese gentleman fifty to sixty miles in one day, the same man going the entire distance. "I am credibly informed," says Dr. Cutter, "that

An aged Aino.

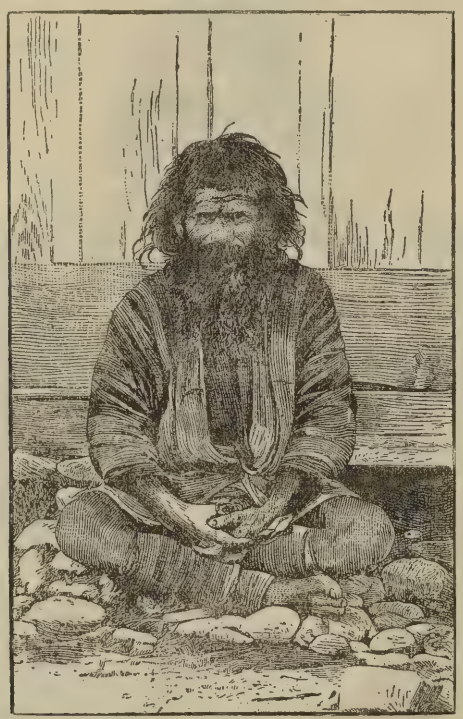
a Tokio man drew one man ninety miles in twenty-four consecutive hours."

On March 22, 1880, one of these, named Soma, aged fifteen years, accompanied by two young men, sixteen and eighteen years respectively (a child in Japan is called one year old when born), left Tenischari to walk to Sappow, a distance of twelve miles. Just before starting, about twelve at noon, the travellers partook of a lunch of rice, pickled radish, and tea. Each took with him two handfuls of boiled rice. One had, in addition, enough ginger, pickled in plum vinegar and salt, to serve for a relish for two meals. They had no alcohol or tobacco. Each had a small half-blanket in addition to the dress of their class—a cotton towel over their ears, an under-garment like a tunic reaching to the knees and opening in front, with large sleeves of simple cotton, into which the hands can be drawn, a cotton

Scott's Midlothian Oat-Flour.—Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

wadded kimono, and a rough Aino coat made from the inner bark of a tree; cotton leggings, cotton shoe-socks, and straw sandals.

Owing to falling snow they lost the path. After wandering about until objects were scarcely visible, they sat down on the snow in the high swamp grass and ate all the rice they had with them, as well as most of the pickled ginger. They soon sank to sleep. That night, according to the records at the weather station of Sappow, the wind was direct from the ice-bound Gulf of Tartary, minimum temperature 24° Fahr. In the morning they had no sensation in their feet or legs; they were unable to move from their resting-place. On the 23rd, 24th, and 25th they disposed of all their food. On the night of the 28th the eldest ceased to speak. On the next day the middle one spoke his last audible words. From this time Soma lay in the



An Aino Indian.

same place, eating snow while it lasted, sipping water out of the adjacent pool, gesticulating and shouting to keep his companions, the carnivorous crows, from their prey, having one desire—"to get home." These occupations filled his conscious hours. On account of the constant pain in his legs he did not sleep well.

On the morning of April 19, attracted by the swarms of crows circling about and perched on the neighbouring trees, searchers found the two dead men, and Soma speechless, pulseless, scarcely able to comprehend the saving party, staring at them with a vacant expression. They crushed some cold rice, added a little water, which they placed in his mouth, and a little of it reached his stomach. He was wrapped in blankets, and on a rude blanket-litter reached the hospital at 5 p.m., April 19, twenty-eight days from the time he left Tenischari, and twenty-five days since the last pickled ginger was eaten.

When he reached the hospital he could not speak, opened his mouth with great difficulty, and could not project his tongue, which had a white coating. Movements of the chest and abdomen could scarcely be detected; a low respiratory murmur could be heard; there was no pulse at the wrists; the impulse of the heart was very feeble; the valve-sounds were indistinct; there was profound torpor of the brain and intellectual faculties; the body was excessively emaciated; fat and flesh had vanished; the abdomen was retracted; the eyes were sunken deep in the sockets; and there was no reflex action of the arms or limbs when they were irritated. The lower part of the back was black, the feet were also black, and both legs were dead as far as the middle third.

Under the influence of warmth, stimulants, and mild food the pulse returned to the wrists next day. Upon the third day he was able to answer a few questions, but slowly and with a very low and indistinct voice. He steadily progressed, intellectually and bodily, his appetite fairly and gradually improving, and his wan and vacant look slowly vanishing. His mind became quite buoyant.

During the twenty-eight days of exposure the lowest daily "minimum" temperature was 18° Fahr.; the average minimum was 33·6° Fahr. The lowest daily "mean" was 26·67° Fahr.; the highest mean 47·6° Fahr.; and the average mean 37° Fahr. On six of the days it snowed; upon five of them it rained; but few of them were cloudless, genial days.

The young man Soma is of medium stature and weight, of fair physique, and is inured to daily labour and exposure in his northern land. He belongs to the "soldier class."

We see in this example a more remarkable experiment than that by Tanner, and even more remarkable than the starvation case of the stonemason at Cusano, who is reported to have voluntarily starved himself to death in thirty days, rather than pass four years in the prison to which he had been condemned for penal servitude.

A Valuable Invention.—It is gratifying to learn that Mr. R. Adams, of 17, Blackman-street, London, S.E., whose fanlight-openers and silent door-springs are being extensively used, has received large orders for his Patent Reversible Window. The sashes, although they slide up and down in the usual way, can be instantly turned inside out, enabling anyone to clean each side of the glass with ease, while standing in the room.—[Advt.]

SANITARY GOSSIP.

By Dr. Thomas J. Hutchinson, F.R.G.S.I.

(*Corr. Mem. of Anthropological Society at Florence, &c., &c.*)

"An I prate of things here and there,
'Tis only *Gossip*."

WATER.

Amongst the ancient Egyptians the bath was practised as a rite, and in making it a religious ordinance it may be inferred that Moses had in view the prevention or more speedy cure of those skin diseases so prevalent in the East. All the wealthy Jews in these times throughout Palestine had baths in their houses, and we know how extensively the bath was used by the Pagan Greeks and Romans in connection with their gymnasia. At some periods of its history there were more than 850 public baths in Rome. "The great sanitary law," said Sir Lyon Playfair, some few years ago in the House of Commons, "is wash and be clean, and anything which stood in the way of observance of that law, impaired the health of all communities." The necessity for ample supply of pure water is evident, when we come to consider some facts about it.

The quantity of water daily required for an adult is, on the average, from one-half to seven-tenths of an ounce for

every pound weight of the body. A man weighing ten stone uses about eighty ounces, or eight imperial pints, of water per day. This includes nearly thirty ounces that constitute part of his solid food; and the rest is consumed in a liquid form. The minimum amount of water daily required in order to maintain health—and this includes what is needed for personal ablutions, washing clothes and rooms, and for cooking—is four gallons per head. To perform these operations thoroughly requires about twenty gallons, and with this quantity complete hip and shower baths may be taken freely. Thirty-five gallons per head per day supplied to a house will be found ample for every contingency needing use and application of water. This includes the nine gallons per head which Dr. Parkes tells us are necessary for purposes of sewage, outside of the matters which I have already detailed.

In Dr. Cameron's "Lectures on the Preservation of Health," published many years ago, he advocates a daily bath, or sponging the body with soap and water. "Considerable friction," he adds, "*may* be employed to get rid of the worn-out cuticle, and to cause the blood to circulate briskly through the true skin, thereby stimulating its true functions." My thirty-five years' experience of the daily tub impresses me that friction not only *may* but *must* be employed to make the daily wash useful. There is always a quantity of exuded animal matter on the skin. And when we remember what eminent physiologists, such as Levoisier, Seguin, Simon, Krausse, Erasmus Wilson, and Milton have told us of the number of pores in the skin of a man of ordinary height, and of the length of sweat tube, we must feel it necessary to keep these clear for their functions, which a simple sponging cannot effect. Seven millions of pores in the skin, all opening to the outside, through a length of tubing that if joined together would extend to nearly twenty-eight miles! Eight grains of perspiratory vapour are exhaled through the skin in the course of every minute of our normal existence—a quantity equal to thirty-three ounces in twenty-four hours.

To prove how essential is water to our existence, Dr. Cameron tells us that the larger portion of the matter introduced into our stomachs is composed of water. So that a man weighing fourteen stone, if dried at a temperature of 272° Fahr., or squeezed in a hydraulic press, would lose nearly ten stone of his weight. The fact may appear something of the *reductio ad absurdum*, but it is, nevertheless, true. The mobility of the body is chiefly due to the large amount of water contained in it, and if the supplies of this most essential fluid be cut off, death of the most painful kind ensues.

The Chinese have been long acquainted with the value of artesian wells, and thus practically prove their good habits. I hope that I shall not be considered guilty of professional heresy in saying that the system of medicine pursued by the highest personage in the Flowery Land may be considered a wholesome one. The Emperor of China is said to pay his doctors as long as he is in good health. But as soon as he falls sick he orders their salaries to be stopped. No doubt the history of the old times would produce some queer vagaries of medical practice if they were brought to light. Not a few perhaps of the type of Dr. Sangrado, who cured or killed his patients by bleeding and hot water; or of the Dutch surgeon, who is spoken of in Western Africa, and whose practice was to give to the sick, prostrate under the low fever of the coast, doses of calomel by the teaspoonful. It must have been in some of these epochs there flourished in some of the English shires, of which I forget the name and location, a medical practitioner, whose physic must have been bad indeed if it resembled the grammar and rhythm of his verse. His name was I. Lettsom, and he had the following notice painted over his surgery door:—

"When anybody comes to I,
I physics, bleeds, and sweats 'em,
If after that, they choose to die!—
Why what care I? I Lettsom."

The joke of this was, no doubt, intended for the sound of the doctor's name in letting his patients die, if they chose. But it may be doubted if there was anything like a joke in the treatment to nine out of every ten of those who were "physicked, bled, and sweated."

Thankful we may be that we are coming to different times. The great sanitary reformer, Mr. Edwin Chadwick, told at Northampton (on the 18th of April, 1878) how more than forty years ago, Dr. Wilson, of Kelso, at the conclusion of a report on the sanitary condition of the labouring classes in that town, spoke of a better era to come, with extended knowledge of the laws of sanitation and energetic action to put them into practice:—"When man shall be brought to acknowledge—as truth must finally constrain him to do—that it is by his own hand, through his neglect of a few obvious rules, the seeds of disease are most lavishly sown within his frame and diffused over communities; when he shall have required of medical science to occupy itself with the *prevention* of maladies rather than with their *cure*; when the Governments shall be induced to consider the preservation of a nation's health an object as important as the promotion of commerce or the maintenance of conquests, we may hope then to see the approach of these times, when, after a life spent without sickness, we shall close the terms of our unharassed existence by a peaceful death-bed." Although such an Egeria has not arrived as yet, it is progressing by means of the preventible service of the medical profession; and, like other "coming events" that "cast their shadows," we can see daily looming nearer and nearer the good time delineated so eloquently by Dr. Wilson.

Victoria Mutual Assurance Society.—The annual report of the members of this society was held on the 25th ult. The report presented stated that the life-premium income and the accumulated funds each exhibited a satisfactory increase. The Chairman (T. Williamson, Esq.), in commenting upon the report, said:—"It is a great deal in these times to say that the society is progressing, for, according to a good authority—the *Post Magazine and Insurance Monitor* — forty-three other and older companies show diminished premium incomes to the average extent of six per cent." The report states that, owing chiefly to the care with which the lives have been selected, the claims were less in proportion to the life-premiums than they were as far back as 1879, and were only £170. 15s. 11d. in excess of those of that year. The work of the society is evidently conducted on a healthy basis.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

Our Papers on Popular Science.

FIFTH PAPER.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

EVAPORATION AND STEAM.

By E. H. Riches, LL.D., F.R.A.S.

The word evaporation is commonly understood to express the conversion of a fluid into vapour; but, vaporisation from the *surface* of any fluid or substance, is the species of conversion of a fluid into vapour, which admits of the term *evaporation*, as being more strictly applied. Thus, the phenomenon of the diminution of a body, from the surface of which vaporisation is going on by means of heat or by the action of the air, is just what is understood by evaporation. It has now been long known that the ordinary atmospheric air with which we all in common have to deal, contains steam, though in an invisible state, and this need not cause surprise to the non-scientific mind whose idea of steam, perchance, has reference to that which is commonly *seen* issuing from the kettle on the hob or from the tea-urn on the table. A very ready proof that the atmospheric air contains this invisible steam to which we have alluded is at hand, if we observe the water deposited *outside* a glass of iced water, or even if a glass be filled with water drawn from a well which is a few degrees below the temperature of the air. The evaporation, which, be it remembered, is confined to the *surface* of a liquid exposed to the air, may be stopped, as in the case of water, when oil is poured upon it. In the case of sliding gaseliers in our rooms which require water to avoid the escaping of gas, it would be well to pour a little oil on to the water, thus checking the evaporation, and consequent drying up of the water. And it may be remembered that the great evaporating process of the surfaces of oceans, rivers, lakes, &c., is ever unceasingly and silently at work; it was Faraday, we believe, who remarked that in order to produce an amount of steam equal to what would pass away from an acre of ground during one day of an ordinary English summer, it would be necessary to burn sixty sacks of coal. And this work of evaporation is ever going on, and even in the case of snow and ice, when the temperature of the air may be below freezing-point, it is still proceeding to a great extent. No evaporation can take place with respect to the surface of any body which may be perfectly dry, the presence of moisture on the surface of, or within, the body being necessary. And when we consider that this work of evaporation proceeds unceasingly and regularly with respect to the surfaces of our human bodies, and that (as was before remarked) this true evaporation is understood to exist when the vaporisation from the surface indicates a diminution of that body, upon the surface of which this evaporation is going forward, it cannot but be patent to the mind of even the ordinarily intelligent that a proper amount of necessary supply for rectifying this gradual diminution, or wasting, of the human frame, which is ever going on, is one which demands our thoughtful care. This would not be the place to explain the innumerable and perfect laws, meeting as they do the variety of circumstances of human life, upon which the wonderful system of evaporation proceeds from our cradles to our graves; but the nearer we can approach to even a fractional appreciation of them, the more punctilious it will make us, to admit of nothing in our every day's "treading out of life's measure," which can be militant against the perfect working of those immutable laws so providentially and mercifully ordained for our well-being. Just as the evaporation at the surface of water may be checked by pouring oil upon it, so the evaporation at the surface of the skin may be impeded; waterproof clothing or lack of cleansing of the skin may effect this. To see how the wearing of waterproof clothing for any length of time, under ordinary conditions, may be dangerous in the matter of checking that process of evaporation which ought to be allowed to proceed, we may here remark that if the atmosphere which is in immediate contact with the surface of water be *still* and not moved away by wind, the air itself becomes so charged with vapour *that it cannot take off any more* from this water, and so the evaporation from the surface of the water is at a stand-still. A neglect of necessary cleansing of the surface of the skin, too, may approach in deleteriousness of effect to that which ensued so fatally to a young and beautifully-formed child who was covered from head to foot with gold-leaf (non-porous) at a Parisian *fête* some years since. Ignorance of the result which would ensue led to the death of the child in the course of some twelve hours. The condition of the atmosphere has a considerable influence over the evaporation from the surface of water, for it is well known that when the air is dry and warm evaporation will go on rapidly, but as the air becomes charged with vapour, evaporation will proceed less rapidly. Here we see one of the uses of the wind, for as it removes by its force the overcharged air, fresh and drier air rushes in to proceed with the process of evaporation from the surface. The devastating and howling hurricanes with which of late we have been so familiar, have at least their uses, and if we could but always remember this, we might be led into a kindlier feeling towards what, to many of us, is irritating to the nerves, and a cause of vexation in numerous ways.

The heat of the sun in drying and warming the air renders it the more fit for imbibing moisture, in fact, just as when damp objects are exposed to artificial heat, so do we see the effect of the sun causing *vapour* visibly to ascend. The chief circumstances which influence the process of evaporation, are the extent of surface, and the state of the air as to temperature, dryness, stillness, and density. And with respect to the *density* of the air as an influence on evaporation, we may remark that pressure on the surface of liquids has a great influence over evaporation; for example, this is easily seen by placing ether in the vacuum of an air-pump, when vapour rises so abundantly as to produce ebullition. The surface of any watery liquid about 20 degrees warmer than any superincumbent air, however warm or cold that may be, will rapidly give off *true steam*, which is invisible; but as soon as it is mixed with colder air is re-condensed into water, and becomes visible in the form of very minute globules.

It is a fact worth noting, too, that in the matter of its mechanical properties, steam agrees in certain respects with common air; for example, if steam be let into any artificial space, however large it may be, it will always

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

expand enough to fill it, exerting an equal pressure in every direction; and be it remembered that when *pure* it is always invisible and without any smell.

What is theoretically called dry air, that is, air without steam, is not known to exist in nature, and we think is not to be produced by art. It must not be supposed that the visible matter popularly called steam is true steam, in fact, it should be carefully distinguished from steam proper, which is, in reality, an aëriform state of water. The former which we see is, really, a dust-like cloud of minute bodies of liquid water wafted by either a current of moist air, or of true steam.

Steam is about 1,700 times lighter than water, for we know that a quantity of water will yield nearly 1,700 measures of steam at 212° Fah.; and it may be remembered that under ordinary atmospheric pressure, a cubic inch of water expands into a cubic foot of steam at 212° Fah. When water is heated to a certain temperature, it is the tendency which it always has to expand into vapour, which constitutes what is understood as the power of steam—*i.e.*, "energy," or heat—the first of "prime movers," or, as Darwin described it, as "the giant-power, from earth's remotest caves." And just as Lord Clarendon said, with respect to the corruption of human nature, "if we did not take great pains, and were not at great expense to corrupt our nature, our nature would never corrupt us;" so with our physical organisation, perhaps it may be said that if all the physical laws which are at work within us were better understood by us, and not warred against by ignorance or wilfulness, it would proceed in uninterrupted completeness, sickness being a thing unknown, and "our hours would be golden links, God's token reaching heaven."

In the natural sequence of subjects upon which these science papers touch, from a physical standpoint and in reference to personal health so far as it is in the individual power of any to "nurse it," we are led in our next and several subsequent papers to consider the phenomena of *Heat*, and, by stating certain scientific facts in relation thereto, deduce much which will be found to be both practical and interesting.

Fresh Paint.—The current belief among householders that the smell of fresh lead paint is noxious is founded on pretty general experience, but is opposed by the belief, equally current among chemists, that lead compounds are not volatile. A fact recently brought to our notice seems to support the domestic theory. The basis of the useful and popular luminous paint is known to be sulphide of calcium. Now, this compound, when unprotected by varnish, glass, or some other impervious substance, is slowly acted on by the acids of the air, and sulphuretted hydrogen is evolved, which blackens lead paint. This is well known, and can easily be avoided by proper protection of the paint. But the curious thing is that unprotected luminous paint is found to be perceptibly blackened by the fumes from fresh lead paint. There seems to be only one possible explanation of this—namely, that a surface freshly covered with lead paint does actually emit some volatile compound of lead. We believe that many physicians could confirm this view from their own observations in regard to newly-painted houses.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

ECONOMICAL BREAKFASTS, DINNERS, AND SUPPERS.

By Mrs. Thwaites, of Liverpool.

SECOND PAPER.

For those persons to whom coarse oatmeal would be irritating, fine may be substituted. The following is a good way to prepare it:—Put 1 pint of milk or water to boil; mix ¼ lb. of fine Derbyshire oatmeal smoothly with ⅓ pint of milk; add ½ teaspoonful of salt; pour the boiling milk or water to this mixture, stir well, put back into the saucepan and boil gently for 10 minutes. Some allowance must be made for individual taste as to the consistency of porridge. The difference in the quantity of oatmeal for the above proportions would be about 1 oz., more or less. Children should have a liberal allowance of sugar.

It is a pity that food so nutritious and cheap as Indian meal should be so neglected. The better preparations used chiefly in America should not cost in England quite so much as good oatmeal; while the rough, unprepared kind, imported chiefly for the feeding of horses and cattle, is very much cheaper. It can be used for bread, porridge, puddings, &c., with perfect safety, but must always be passed through a fine wire sieve to remove husks and gritty portions. To make porridge, soak ¾ lb. Indian meal overnight in one pint of cold water, adding a teaspoonful of salt. In the morning, boil a pint of water, and pour into it the mixed meal; boil up, stirring all the time, then draw aside and simmer slowly for at least half an hour. Eat with sugar, milk, stewed fruit, &c. This preparation is largely eaten by almost all classes in Italy and America; it goes by the names polenta and mush. Cold, it may be cut into slices ¾ in. thick, and fried in hot fat. A useful little dish may also be made by baking it thus: Put the slices into a greased pie-dish with grated cheese, and salt and pepper to taste. A few little bits of butter or dripping over the top; bake in a quick oven for about 20 minutes. Bread, puddings, &c., in which Indian meal can be used will follow in due course.

Oatmeal and Indian meal show a composition as follows in 100 parts:—*Oatmeal.*—Water, 15; nitrogenous matter, 12·6; starch, 58·4; sugar, 5·4; fat, 5·6; salts, 3·0. *Indian Meal.*—Water, 14; nitrogenous matter, 11; starch, 64·7; sugar, 0·4; fat, 8·1; salts, 1·7. In oatmeal 69·4 of heat-giving and 12·6 flesh-forming, against 73·2 and 11 in Indian meal. It is plain, then, that such articles of food compare favourably with many dishes in general use and costing much more. Breakfasts of this kind are specially adapted for winter.

Dinners.—Onion Soup.—Put into a saucepan 1½ oz. butter; let it melt, and add an equal quantity of flour; mix smoothly, and add 1½ pint of the water from boiled onions (see last article); stir until it boils; add salt and pepper to taste, and a pinch of nutmeg or powdered mace. Mix the yolks of two eggs well with a quarter-pint of hot milk; add the soup; continue to stir for three or four minutes to prevent the yolks curdling. Upon no account let it boil. A teaspoonful of finely-chopped parsley, tarragon, or chervil, would be an improvement for any one accustomed to French soups.

Maccaroni and Cold Meat.—One pound of either cold beef or mutton minced or chopped very fine; a little fat should go with it. Season with a teaspoonful of salt, one-third of a teaspoonful of pepper, and a small pinch each of nutmeg and sweet herbs; a teaspoonful of finely-chopped onion may be added if the flavour is liked. Put half a pound of straight maccaroni into three pints of boiling water, add a large teaspoonful of salt; boil until the maccaroni is just soft, but not at all broken; put a layer of it at the bottom of a greased pie-dish, then a layer of the seasoned meat, more maccaroni, and so on till the dish is full; pour over a cupful of gravy, made by either breaking and boiling the bones of the cold meat or dissolving a small teaspoonful of meat extract in hot water; half a tablespoonful of sauce or ketchup, if at hand, may also be put in. Spread a thin layer of stale bread-crumbs over the top, and add a few small bits of butter or dripping; bake thirty to forty minutes.

Maccaroni is simply a paste made from fine wheaten flour, well beaten, pressed into the shapes in which we see it, and thoroughly dried. Its value may be judged by the way it swells in cooking; when good it will become three or four times its original size. The flesh-forming and heat-giving properties are rather higher than those of fine wheaten bread. Properly cooked it forms an agreeable change from pastry or vegetables.

Supper.—Stewed potatoes, 1½ lb.; peeled potatoes, cut into slices, ½ in. thick; put them into a saucepan with one small onion sliced; a teaspoonful of salt, ¼ teaspoonful pepper, a pinch of nutmeg, and 1½ oz. butter; cover the pan, and set over a very gentle heat for ten minutes; give the pan an occasional shake to prevent burning. Pour over as much milk as will just cover the potatoes, simmer very slowly till they are quite soft, put in a teaspoonful of finely-chopped parsley, and serve.

As a useful vegetable the potato ranks higher than any other, although by no means showing a composition to sustain life and health. In 100 parts of potato:—Water, 75·0; nitrogenous or flesh-forming matter, 2·1; starch, 18·8; sugar, 3·2; fat, 0·2; salts, 0·7.

The salts, chiefly those of potash, act on the general health, and the potato is thus one of our most valuable scurvy-preventing vegetables. The large proportion of starch found in the potato renders it particularly suitable to go with fat, milk, or butter-milk. It is well, where economy must be closely studied, to remember that uncut baked potatoes lose less of their nutritive properties than when boiled or steamed, and really go much further in satisfying hunger.

No vegetables are liable to so much variation as the potato. When young and waxy they are indigestible for most people, and entirely unsuited to children and invalids. The changes caused by disease, frost, and sprouting in spring, also make them more or less unwholesome. When in good condition, however, there is no limit to the cheap and wholesome dishes a thoughtful housewife can concoct from them.

Test for Calomel.—Put a little suspected calomel on a clean knife blade. Moisten with alcohol and rub with a cork. Pure calomel will not attack the steel, but corrosive sublimate, or calomel containing any sublimate, will produce black spots.

No More Gas in Daytime.—More than 30,000 of Chappuis' daylight reflectors are fitted up in London only, by which means gas is done away with, and the places rendered cheerful and healthy, added to which a considerable economy is effected. Prospectus sent on receipt of two stamps addressed to (H.) Chappuis, 69, Fleet-street, London.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HOUSE-HEATING APPLIANCES.

THIRD PAPER.

By Professor Trowbridge.

To the architect and sanitary engineer of the present day the terms warming and ventilation have certain technical meanings, and when employed together refer to systematic arrangements and appliances in the construction of dwellings, public buildings, churches, and halls of audience, by which not only may suitable temperatures be maintained in these structures, but proper quantities of pure and fresh air supplied continuously. It may be laid down as a fundamental principle that the warming and the ventilation of dwelling-places are equally indispensable to health, and that they are, to a great extent, inseparable in their relation to each other, and, ordinarily, in the appliances by which they are effected.

Four modes of heating, which furnish at the same time different degrees of ventilation, comprise all in common use, viz., the open fireplace, the close stove, the hot-air furnace, and the steam-heating apparatus. A comparison of these methods involves, for each, the cost of the apparatus and its durability, the cost of fuel and attendance, and the efficiency of the apparatus for heating and ventilation.

The open fire and the stove furnish means for a constant supply of heat, through combustion of fuel, within the room to be heated. The open fire gives off its heat to the walls and objects in a room only by radiation from the burning fuel, all the air that passes the heated surfaces of the fire-place going directly up the chimney. Hence, this method is inefficient for heating, especially when the walls of the room in which the fire is placed are greatly exposed to outside cooling influences. Moreover, much more air than is necessary for combustion passes up the chimney, from the very nature of its construction; and, as this air must pass through the room to the chimney, it is difficult in general to avoid cold currents of air. Remote corners are apt to receive little heat directly, and the full effect of the open fire for a dwelling requiring, as it must, a fire for each room, is attained only at a great expense of fuel. While the first cost of the fire-place may not be great, the cost of fuel, except when such open fires are mere adjuncts to some other system, renders this mode of heating, as houses are now constructed and occupied, quite out of the question for the ordinary householder. As regards ventilation, however, the open fire is of all systems the most admirable.

The second mode of heating, the close stove, is doubtless of all modes the most universally practised at the present day. Whether the stove be a simple structure of cast or

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

wrought iron, having an interior chamber for the combustion of fuel, with a plain, wrought-iron pipe to lead away the gases of combustion, or whether this simple structure be encased or provided with additional chambers and pipes for the more extended circulation of the heated gases, and to furnish the greatest possible heating surface, the statistics of manufacture alone furnish evidence that there is some special advantage in this mode of heating which commends it to popular favour. It is not difficult to account for the preference; the stove can be placed at little expense in any room of any building where there is a flue for carrying off the smoke and the gases of combustion. The activity of the fire can be modified at will to suit any degree of external temperature; and as it is generally employed with the minimum amount of ventilation, and often with almost none at all, the economy of heat is all that can be desired. But, in proportion as an active and sufficient ventilation is demanded, this efficiency of heating disappears, and, since the usual practice is to trust for ventilation to the accidental influx of air through crevices in the window and door casings, the use of a stove is quite sure to lead to a vitiated atmosphere. Owing to the fact that the heating appliances of both the open fire and the stove are confined almost entirely to the room or apartment in which the fuel is burned, the heating of a building comprising many apartments, by these methods, can only be accomplished by increasing the number of fires or stoves. The economy which might be practicable for a single room then disappears to a great extent, owing to the increased cost of attendance, as well as waste. —*North American Review.*

Glass School Desks.—School desks made of glass form the subject of a patent taken out by F. Bender, of Düsseldorf, Germany. The table is made of so-called rough glass, fine polished on one side and rough on the other. The finer side is used for writing, while the rougher is coated with colouring matter, consisting of Syrian lack, black, and some dissolved black wax. After the glass is sufficiently warmed, a thin coating of this is given and then polished with pumice.

"Of all the plans for economising space," said a patent lawyer, "the man who just left this office evolved the funniest. He had a drawing of a sleeping-car that he wished me to get patented for him. He thought it was a good thing, and would hit the railroad managers hard, because it nearly doubled the number of berths in the car. I saw right away that the beds were ridiculously short. I asked their length. 'Four feet and a half,' he replied; 'and that's plenty long enough. A careful investigation has proved to me that there is really no use in a bed being as long as the person in it. Not one man in fifty ever sleeps straightened out, and women invariably draw up their knees, so that they don't require more than a four-foot bed. It is a discovery of this fact as to sleeping that I wish to protect by the patent. I should stick up in each compartment a printed notice, explaining that the middle of the car is much safer than the sides, and therefore the closer their legs are hauled in toward the centre partition, where their head are to be, the less they are liable to be hurt by collision.'" The lawyer did not take the case. He also declined that of a man who wanted to patent a spring bottom for coffins, the idea being that, if people were so generally ready to buy easy couches for their bed-rooms, they would be still more desirous of comfort in their graves.—*New York Sun.*

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

SIXTH PAPER.—BAR, WAND, AND DUMB-BELL EXERCISES.

"Now, girls, form up in line as you were taught yesterday.* Call out your numbers commencing from your right. Even numbers, step back two paces to the rear. Now, each select a stick from the bundle as I offer it to you that will just allow your fore-arm to be horizontal when your hand rests on the knob and the other end of the stick on the floor.† Now, you have all got sticks, bring them on the floor by your side. That's right. *Attention!*

"I want you to go through the extension exercise like you did in the first lesson; that is, I want you to swing your arms round six times in succession, first from the front and then from the rear, and then from the front again. Ready! Commence! That's right; stand at ease for a minute. This exercise it is best to perform as a preliminary to each exercise, that you may get your breathing organs into working order. Now pick up the sticks and come to attention, while I say a few words on the value of the exercise you are going through.

"In the first place the following exercises form a useful preparation for more arduous movements to be gone through later on; in the second place, their usefulness exists in inducing flexibility of the shoulder-joint; in the third place, these exercises set up the back and shoulders, preventing the latter from becoming 'round' and the chest from sinking in. Now, girls, *attention!* Bring the stick horizontally across the body, at the full extension of the arms, grasping it with the hand at either end, thumbs inwards towards each other, and consequently knuckles pointing to the front. Stand perfectly erect and throw the chest forward.

"That's right. Now, *without bending the elbow*, raise the 'wand,' as I shall now call it, above your head, and remain steady.

"Now bring the wand down *behind* you as far as you can, likewise without bending the elbows. Ah! I see some of you want longer wands. I shall have to provide some for you four feet long. You now find that when the wand is behind you the thumbs are outwards from each other; the palms likewise, and the knuckles towards your back—in fact, exactly reverse to what they were previously. Now bring the wand above your head and down in front of you again in one movement. That's right. Now go through it six times in succession, performing each movement separately when I call out, 'One, two, three.' Well done! Now try and do it in two movements—that is, without making a pause when you have raised the stick above your head, but carrying the wand behind you in one movement. Stand at ease!

"The next exercise will be for you to pick up the wand from the floor with both hands, one at either end, raise it above your head, and then lay it on the floor again in front of you. Repeat this exercise six times, and then proceed to the third exercise.

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* See Second Paper.

† For a person 5 ft. 6in. high the "wand" required would be about 39 in. long.

"This is to pick up the stick at each end, as in the last. Knuckles, of course, pointing to the front, and carrying the wand behind you in one movement, and bring it back again and lay it on the floor. Repeat this movement six times in succession.

"You may now go through these exercises with the knuckles reversed, that is, grasping the wand with the palm pointing to the front.

"Exercise Four.—Raise the wand above the head, then bring it down on each side alternately, so that it is perpendicular, remembering that the elbows must not be bent. To do this, you lower one hand to raise the other.

"The correct position for the wand to be in when it is perpendicular is for the lower hand to be as low as it can reach, fingers pointing downwards, and the upper arm being brought level with the head.

"Fifth exercise.—Hold the wand perpendicular in front of you, arms fully extended, hands about six inches apart, and grasping the wand near the middle, keeping the legs and arms stiff, move the wand from side to side, as far as you can reach, the upper part of the body partly turning at each movement.

"This will be enough exercise for to-day."

"Are there any more, Charles? I feel quite refreshed after these."

"Oh, yes, several more fascinating movements to be performed, which I will put you through in the next two lessons, between exercises with the bag and ring."

"In the exercises with the wand you will see that all the movements are done with the arms and shoulders and upper part of the body, the latter moving with lower limbs which are kept perfectly stiff and erect."

(To be continued.)

Tincture of iron, or "steel drops," is said to be more pleasant, and not to injure the teeth, if taken combined with simple syrup and milk.

Pills containing one-third to two-thirds of a grain of pure creosote are said to prove beneficial to those suffering from chronic catarrh, consumption, or spasms. The maximum single dose is three-quarters of a grain, to be taken three times a day.

Try!—Try popcorn for nausea. Try cranberry for malaria. Try ginger ale for stomach cramps. Try gargling lager beer for cure of sore throat. Try swallowing saliva when troubled with a sour stomach. Try eating fresh radishes and yellow turnips for gravel. Try eating onions and horseradish to relieve dropsical swellings. Try buttermilk for removal of freckles, tan, and butternut stains. Try hot flannel over the seat of neuralgic pain and renew frequently. Try taking cod-liver oil in tomato catsup if you want to make it palatable. Try snuffing powdered borax up the nostrils for catarrhal "cold in the head." Try taking a nap in the afternoon if you are going to be out late in the evening. Try hard cider—a wineglassful three time a day—for ague and rheumatism. Try breathing the fumes of turpentine or carbolic acid to relieve whooping-cough. Try a cloth wrung out from cold water put about the neck at night for sore throat. Try an extra pair of stockings outside of your shoes when travelling in cold weather. Try walking with your hands behind you if you find yourself becoming bent forward. Try a silk handkerchief over the face when obliged to go against a cold, piercing wind. Try planting sunflowers in your garden if compelled to live in a malarial neighbourhood.—*American Druggist.*

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

INFANT-FEEDING.

How to Feed an Infant. By Benson Baker, M.D., &c. (Baillière, Tindall, & Cox, London, Paris, and Madrid.)

There is no doubt that many of the diseases and ailments from which infants suffer are caused by improper feeding, and that many of the sad sights with which we are constantly confronted in the streets of our large cities are the result of ignorance and neglect on the part of those who have had the care of these unhappy objects in their early years. And when one considers how much pain and trouble might be saved by a little attention to those things which every woman, at least, ought to know, it cannot but appear a crime when those who have the charge of children willingly pass by the means of knowledge which are brought before their notice. Dr. Baker, in the little book before us, says that many women know little or nothing about children before they marry, and that when they become mothers they are simply obliged to experiment upon their children in order to discover how they ought to be treated; and, of course, the unfortunate little creatures suffer from their mothers' ignorance.

A knowledge of the elements which enter into the composition of the body, and of the structure and functions of the principal organs that are engaged in nutrition and the maintenance of the functions of organic life, would appear to be a rational basis on which to found the theory and practice of infant feeding. It is, therefore, proposed to enumerate the more important and constant elements out of which the child is built up, with special reference to the maintenance and growth of the tissues, and the change these tissues undergo, the means by which they are supplied with new material, and the ways by which the waste or effete material is eliminated from the system. The question of feeding an infant embraces much more than the simple procedure of putting food in its mouth. It is of paramount importance that the food administered should possess the chemical constituents which are absolutely necessary for the maintenance of the heat of the body, for the formation of nervo-muscular force, the development of new tissues, and the repair of the old; and, further, the aliment should allow of that rapid metamorphosis or change in the tissues which especially takes place in healthy infant life. In order that these obvious functions of organic life may be duly performed, it is also necessary that the child should be placed under such hygienic conditions as are known to promote nutrition and growth. Therefore, the skin should be kept perfectly clean, inasmuch as it is a very important organ in eliminating those waste products which result from the digestion of food and the disintegration of used-up tissue. The protection of the skin in a newly-born infant ranks next in importance to feeding. If the bodily heat of the child be not conserved by suitable warm clothing, congestion of the highly sensitive and vascular tissues of the infant immediately takes places, and death is often the consequence. A fall in the thermometer in winter is the death-knell of thousands of the badly-fed and insufficiently-clothed children of the poor. If the skin be kept clean and warm, it is enabled to perform its duty as an organ for relieving the system of waste material. When this is not efficiently done, nutrition cannot be properly carried on. The skin and the lungs are scavengers, and if they do not do their duty, the roads become impassable, and new material cannot be delivered at its destination.

Irregularity in the feeding and inattention to the quantity given, and to the general health of the nurse, are all causes of disease in, or at least of discomfort to, infants in the earlier part of their existence. Dr. Baker is particularly careful in impressing upon mothers the necessity of keeping up their strength and vigour by good and appetising food while nursing. She should eat, he says, whenever she *begins* to feel hungry, lest in waiting for the regular meal-time she lose all inclination for food. The idea that much wine, beer, and stout is necessary and

wholesome for a woman at this time is not only erroneous, but often positively injurious. Of course, it is an idea that has taken its hold among many mothers and nurses, but it has been plainly proved that, though the quantity of milk is increased, its quality deteriorates. Another practice which has always prevailed is the administration to a nursing mother of gruels and slop-diet, thereby treating her as if she were recovering from some dangerous malady, whereas she is only experiencing one of the conditions of nature, and really requires her strength to be kept up with nourishing and wholesome food. Therefore she ought to eat as much as she desires, and whatever agrees with her is not likely to disagree with her child. "In fact," says Dr. Baker, "the sooner the mother gets back to her regular diet of three or four meals a day, composed of such articles of food as she has been accustomed to and can digest, the better both for herself and her child." Of course, there are cases where the temperament of the mother render it safer that her diet should be accurately prescribed.

As milk, and nothing but milk, is the proper food for infants, a knowledge of how to administer this nourishment by hand is necessary. No child should have meat given to it until it has *finished* teething. Much of the delicacy with which young children are troubled arises from the foolish haste which their nurses show to introduce them to a meat diet. Dr. Baker shows how worse than foolish such a practice is, adding, in conclusion :—

> It is a serious matter to tamper with the health of children, for on their health rest their future happiness and usefulness to a much greater extent than is generally recognised. "As the twig is bent, so the tree will grow." As children are nourished on the right or wrong principles, so will they grow or fade away. The greatest triumph of the medical art is so to direct and control hereditary tendencies of disease in infant life, so that when adult age is reached, inherited predisposition may be outgrown. In the words of the celebrated Hunter I close this chapter: "If you would have strong children, remember there are three requisites—plenty of milk, plenty of sleep, and plenty of flannel."

The appendix of the book contains notes on some of the common ailments of infancy, with their hygienic and curative treatment. As prevention is always known to be better than cure, the author gives mothers and nurses the wise advice rather to discover how to keep their little charges well than, by neglecting them, to allow them to fall ill and then be subjected to a system of drugging. Most of the ailments from which infants suffer might be avoided altogether by strict attention to dieting and general treatment, as not a few of the most distressing symptoms are caused by a disordered condition of the stomach and bowels, due, of course, to improper feeding. The causes of a child's inability to disgest its food may result from several sources. It may not be properly clothed, may lack good sunlight and fresh air, or the advantage of baths. It may be sleeping in a badly-ventilated room, or may be subjected to so much excitement during the day that it is unable to sleep properly at night.

> The nervous system becomes exhausted, and digestion is retarded or rendered inoperative altogether, whereas under favourable hygienic conditions digestion would proceed rapidly, and this is an essential condition of health in a growing infant. It becomes apparent that some of the most troublesome ailments of infant-life are not to be traced to the infant's constitution, but rather to the surroundings and conditions in which it lives. The observance of the laws of health are essential to the growth and development of the infant; and the neglect entails present suffering to the child, and future misery, should it grow into a debilitated man or woman.

Dr. Baker makes some very much-needed observations upon the causes of crying and whining in young infants. As a rule, when babies cry, they are at once supposed to be hungry, and food is given without the slightest consideration as to whether the little creature is already satisfied or not. When we remember that a child has no power of making his uneasiness known *except* by crying, it will be seen that the causes may well be varied. Heat, cold, tight strings, sleepiness, may all cause uneasiness (which will be manifested by crying) as much as want of food. Mothers and nurses, therefore, would do well to ascertain the *reason* of an infant's wails, and use the proper means to alleviate their suffering.

In conclusion, we cannot do better than use Dr. Baker's words, which breathe the same spirit of wise and thoughtful consideration and clear common-sense in which his whole book is written :—

> Parents should not only strive to know the physical constitution, but also the mental and moral disposition of their children. By so doing a wise and happy restraint and indulgence could be exercised for the present comfort and future good of all. There would thus be secured less crying in the nursery, and less bitter weeping in future homes.

Corn, Wart, and Bunion Cure.—Mix 16 fluid ounces of collodion with 2 oz. (avoir.) of salicylic acid, and, when this is dissolved, add 1 oz. (avoir.) of chloride of zinc. Keep it tightly stoppered and away from lights or fire.

A Medical Attendant's Bill.—"I understood you to say that your charges would be light," complained a patient when his doctor handed him a tremendous bill. "I believe I said my fees would be nominal," was the reply, "but——" "Oh, I see," interrupted the patient, "*phe*nomenal!"

"A Living Death."—A story has been going the round of the newspapers, which has been supposed to be "a singular instance of the inability of even medical men to distinguish between trance and actual death." As, however, it appears that no medical man was consulted on the point, the train of reasoning by which this conclusion was arrived at is not very evident. The case, however, is one of some interest, and we are enabled to give the following authoritative account of it. The patient was a young girl, aged 14, who first came under treatment two months ago; she was suffering from acute phthisis, complicated at the time by pleurisy and pneumonia; no unusual symptom occurred until about a month later, when she was seized with convulsions of an epileptic character; these yielded to treatment in a few days. On Jan. 8, the assistant of the gentleman who had been attending her was met at the door by the patient's mother, with the statement that her daughter had suddenly died at about a quarter to four in the afternoon; he was told that she threw up her hands, stretched herself very stiffly, and ceased to breath; her mother and two other neighbours came to the conclusion that she was dead, having failed to detect any signs of life after watching her breathing and pulse. Two hours after her supposed death, the child was washed all over, bandaged, and carried upstairs (from the cellar-kitchen in which she had lain throughout her illness), and "laid out" on a coffin-board. At about 7 p.m., the mother and friends were startled by the cry "Mother" coming from the upper room, and the girl was found on the top of the stairs. Strangely enough, it would appear that she has not been rendered materially worse by this occurrence. She has since taken very little food, and frequently faints for a few minutes; her pulse is small and very slow (between fifty and sixty.) It is thought that the so-called trance was a prolonged fainting fit, which might have been much shortened had warmth and proper restoratives been applied.—*British Medical Journal.*

International Health Exhibition.

LONDON, 1884.

FOURTH PAPER.

CLASSIFICATION OF EXHIBITS.

DIVISION I.—HEALTH (*continued*).

Group 5a.—METEOROLOGY IN ITS RELATION TO THE STUDY OF PUBLIC HEALTH.

Class 46A. Meterological Instruments, such as are used in climatological investigations; Barometers, Aneroids, Thermometers, Earth Thermometers, Thermometer-stands, Hygrometers, Anemometers, Air-meters, Rain-gauges, Automatic Meteorological Apparatus, Sunshine-recorders, Evaporation-gauges, Ozone Papers, Ozonometers, &c.

,, 46B. Diagrams, Models, and Apparatus Illustrative of (*a*) the Climatal Conditions prevaling in various parts of the World; (*b*) the Relations between Health and Disease; (*c*) Rainfall, Percolation, Evaporation, and Flow from Ground; and (*d*) other subjects embraced by the Exhibition.

DIVISION II.—EDUCATION.

Group 6.—EDUCATIONAL WORKS AND APPLIANCES.

Class 47. Crèches and Infant-schools.—(*a*) Apparatus and Fittings for Crèches and Infant-schools; (*b*) Games, Toys, and Kindergarten Amusements; (*c*) Models and Appliances for Teaching; (*d*) Examples of School Work.

,, 48. Primary Schools.—(*a*) Apparatus and Fittings; (*b*) Models and Appliances for Teaching; Text-books, Diagrams, and Examples; (*c*) Specimens of Work in Elementary Schools.

,, 49. Domestic Economy and other Forms of Technical and Industrial Education for Girls.—(*a*) Models and Apparatus for the Teaching of Cookery, House-work, Washing and Ironing, Needlework and Embroidery, Dressmaking, Artificial Flower-making, Painting on Silk, Pottery, &c.; (*b*) Specimens of School Work.

,, 50. Handicraft Teaching in School for Boys.—(*a*) Apparatus and Fittings for Elementary Trade Teaching in Schools; (*b*) Specimens of School Work.

,, 51. Science Teaching.—(*a*) Apparatus and Models for Elementary Science Instruction in Schools; Apparatus for Chemistry, Physics, Mechanics, &c.; (*b*) Diagrams, Copies, Text-books, &c.; (*c*) Specimens of the School Work in these subjects.

,, 52. Art Teaching.—(*a*) Apparatus, Models, and Fittings for Elementary Art Instruction in Schools; (*b*) Diagrams, Copies, Text-books, &c.; (*c*) Specimens of Art-work, Modelling, &c., in Schools.

,, 53. Technical and Apprenticeship Schools.—(*a*) Apparatus and Examples used in Primary and Secondary Schools for Teaching Handicrafts; (*b*) Models, Plans, and Designs for the Fitting up of Workshop and Industrial Schools; (*c*) Results of Industrial Work done in such Schools.

,, 54. Schools for the Blind and for the Deaf and Dumb.—(*a*) Apparatus and Examples for Teaching; (*b*) Specimens of School Work.

,, 55. Literature, Statistics, and Diagrams relating to Group 6, and to the Effects of "Cramming" and Overwork on the Young, &c.

,, 56. Collective Displays of School Work and Appliances. School Museums.

,, 57. Machinery and Appliances relating to Group 6.

TABLE SHOWING WITH WHICH CLASSES THE VARIOUS SUB-COMMITTEES DEAL.

Classes	1—12	Food.
,,	13—19	Dress.
,,	20	Construction and Fittings.
,,	21—23	Water Supply and Sanitation.
,,	24—26	Heating, Lighting, and Ventilating.
,,	27	Water Supply and Sanitation.
,,	28—31	Construction and Fittings.
,,	32—33	Water Supply and Sanitation—Construction and Fittings—Heating, Lighting and Ventilating.
Classes	31A—31B	Ambulance.
,,	34—40	School and Education.
,,	41—46	Workshop.
,,	46A—46B	Meteorological.
,,	47—57	School and Education.
		Library.
		Laboratory.
		India.

Sanitary Appliances, Etc.

ALLEN'S BRONCHITIS KETTLES.

MESSRS. ALLEN, of 21, Marylebone-lane, Oxford-street, London, W., have sent us one of their Bronchitis Kettles, adapted for the treatment of that disease, and of asthma, croup, and allied conditions. Nothing more ingenious in the way of a handy apparatus has been invented. The "Kettle," as may be seen from the illustration, is adapted either for being set on a fire, or for being heated by a lamp. By this means steam vapour is readily generated; and by aid of a series of tubes and mouth-pieces, any particular exigency which appears in the treatment of a case of bronchitis can be met. A "Medicator" or "Receiver" is supplied with the kettle. This is a perforated receptacle, which can be attached to the opening on top of the boiler whence the steam issues; and when filled with any medicinal substance, such matter is vaporised by the steam, and thus becomes available for the treatment of disease. The tubes of the kettle are jointed, for convenience of packing, and can be used with a "spreader," if preferred. The felt in the spreader may, when saturated with a drug, also become available for the diffusion of medicated vapour. We can readily understand, from an inspection of these kettles, and from the knowledge of their simplicity and satisfactory working, how they have become almost universally adopted by medical men for the treatment of all lung diseases requiring either ordinary steam vapour or medicated vapour. The apparatus cannot get out of order save through wilful neglect, and the want of all complexity and intricacy of details renders these "Kettles" favourite means for home

treatment of ordinary colds. When we consider the clumsy means often used for the production of vapour, and the unsatisfactory results attained by ordinary methods of steaming, the advantages of these "Kettles" become plainly apparent. We would recommend a Bronchitis Kettle to be ranked amongst the household goods of every family. Especially in cases where children are concerned, and where the production of hot steam vapour, with all its soothing properties, is required—often at a moment's notice—the value of Messrs. Allen's invention will be highly appreciated.

Among Messrs. Allen's other inventions we are glad to note their "Portable Vapour Baths," and their "Inhalers, and Nursery Kettles." Their "Spray Apparatus" for the throat is also a marvel of cheapness and simplicity; while we have pleasure in recommending to the notice of our readers their "Improved Enema and Douche." Those who are in search of handy and reliable domestic apparatus for the treatment of disease cannot do better than pay Messrs. Allen's emporium a visit.

GRISCOM'S ELECTRIC MOTOR FOR SEWING-MACHINES, &c.

IN answer to several inquiries we beg to state that the above "Motor" can be seen at work at the depôt, 2, Scott's-yard, Bush-lane, Cannon-street, London, E.C. From a health point of view, such an invention is of high importance. Many complaints are either induced or aggravated by the exertion required to work a sewing-machine, and the value of a "motor" readily applied, and of sufficient power, such as that above noted, becomes plainly apparent. The "Motor," we understand, will be exhibited at the forthcoming "Health Exhibition."

[ERRATUM.—Through a slip of the pen in referring to Thomson's "Nerve Tonic," the address of Mr. Thomson, Chemist, Glasgow, was given in HEALTH, No. 47, p. 349, as 17, *London*-street. The proper address is 17, Gordon-street, Glasgow.]

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

LETTERS TO THE EDITOR.

CREMATION.

Sir,—Your contributor, Mr. Williams, displays a sad lack of knowledge upon the subject he has ventured to write about, viz., "An Alternative to Cremation." He seems to have lost sight of the fact (long since admitted by very many of our scientific investigators) that the human body is composed of about two-thirds (or 66 per cent.) of "fluid matter." His idea of a sort of pyramid composed of several hundred of decomposing bodies, built in with a concrete wall, is, to say the least of it, preposterous. Any such pyramid so constructed would soon become saturated from within, and give off gases highly prejudicial to health. Apart from this serious fact, the idea is wholly impracticable.

I would therefore suggest that until we are educated up to the "cremation point," there is no better plan of disposing of our dead than the "earth to earth system" in simple "wood coffins" only, the earth itself, by its known deodorising properties, being a valuable safeguard against the spread of disease germs.* The use of "metal coffins," brick graves, vaults, and catacombs should be forthwith and for ever abandoned.—Yours faithfully,

Camberwell, *March* 7, 1884. W. D.

COMMON SODA FOR COOKING PURPOSES.

Sir,—I am glad to find that you call attention in a recent number of Health to the ignorant and injurious practice of using common soda in boiling vegetables, with the idea that it makes them green; and again, to hurry the cooking when late. Chemists say that the advantage of soda for this purpose is that it "precipitates the lime present in hard water;" but it may be asked whether the employment of such a caustic agent as the potash of commerce is justified at all, more especially when it is remembered that in the vegetable kingdom various kinds of potash are found, which would naturally and safely fulfil all the purposes sought to be obtained by the very dangerous, because excessive, use of the common washing soda in the hands of ignorant cooks.—I am, Sir, obediently yours, M. A. B.

STERILIZATION OF LIQUIDS.

Sir,—We are glad to see from your reply to "Sanitary Engineer," in a recent number of Health, that others are taking an interest in the above question. Although we agree that boiling gives some protection, we think a reference to more recent publications shows that certain important points are still *sub judice*. In the proceedings of the Royal Society for 1871 there is a paper by the late Dr. Crace-Calvert, in which he draws the conclusion from a series of experiments, that protoplasmic life is but slightly affected by a temperature of 100° C., and that even at a temperature of 150° C. it is not entirely destroyed, excepting in the case of gelatine. In all other fluids he found a temperature of about 200° C. necessary to completely destroy the life. Referring to Dr. Beale, Dr. Crace-Calvert quotes his (Dr. Beale's) view that living forms might live, though exposed, under certain conditions, to a temperature of 177° C. Dr. Buchmer states, as the result of his experience, that one hour's heating to about 110° C. is required to sterilize a liquid completely. Dr. Cameron, M.P., in a paper read not long ago before the Philosophical Society of Glasgow, explains this in the following way:—Microbes are killed on being submitted to a boiling heat, sometimes even at a lower temperature; but as to their spores, from which their succeeding generations spring, there is almost no killing them, and the latter have been known to survive eight hours' boiling. This is precisely also Dr. Tyndall's experience, as stated in 1877, in a lecture at the Royal Institution.

All these experiments refer in the main to the destruction of ordinary bacteria, and not of the germs, which we assume are the cause of certain diseases in man. Though some of the latter have been isolated with more or less probability—thus quite lately the bacillus of cholera by Dr. Koch—almost all our knowledge of this nature is based upon the supposition of analogy with the ordinary bacteria. Thus we have it upon the authority of Mr. Huxley that the epidemic diseases—splenic fever, pig typhoid, and cholera of fowls—are invariably caused by bodies of the nature of bacteria, and that there is every reason to believe that analogous diseases in man are caused by similar organisms.

Regarding the destruction of disease-germs by filtration, if we may at all draw conclusions from the action upon ordinary bacteria, we beg to point to the papers by Prof. Bischof, read before the Royal Society in 1877 and 1878, and the experiments by the late Mr. Hatton, communicated to the Chem. Soc. in 1881. Corroborated as these are by the XIX. Army Medical Rep. and other publications, there can scarcely be a doubt that spongy iron has an antiseptic action on living organisms contained in water. Practical indications, such as those in the XIX. and XX. Army Medical Reports, are also not wanting to show that disease-germs themselves are destroyed by filtration of water through spongy iron. May we, therefore, venture to inquire whether, when speaking of a "purely filtering process," you meant to include filtration through spongy iron?*—We remain, sir, your most obedient servants,

The Spongy-Iron Domestic Filter Company.

22, New Oxford-street, W.C., *March* 7, 1884.

QUERIES AND ANSWERS.

GENERAL.

Omaha.—We do not know the firm to which you allude, but we should think the business they transact, judging from their circular, is of a somewhat shady description.

S. Motor.—The description of the spring-motor, to which you allude, appeared in the *Times* about the date at which the notice appeared in Health. Your best plan would be to consult a file of the *Times* of the date in question, when you will meet with the article describing the motor.

B. A.—Bread is not, as you seem to think, a single and simple food; but a compound food consisting of water, gluten, starch, minerals, and fat. Each of these substances is, physiologically, a food on its own account.

C. E.—The late Dr. Hall, of Sheffield, gave the following as the average duration of life of Sheffield artisans:—Dry-grinders of forks, 29 years; razors, 31 years; scissors, 32 years; edge tools and wool shears, 32 years; spring knives, 35 years; files, 35 years; saws, 38 years; and sickles, 38 years.

Interested.—It would seem as though the condition to which you refer was the cause of the outbreak, but the question is a difficult one.

Algoa.—See article on consumption in Health, No. 47.

Hilda B.—1. Papers will be commenced at an early date. 2. All the blood which nourishes the body, or any part thereof (*i.e.*, pure or arterial blood), comes from the left ventricle of the heart. The lung-tissues are all nourished by blood conveyed in arteries which are branches of the *aorta*, or main artery, arising from the left ventricle.

W. D.—A brine or pickle for pork may be made thus:—Brown sugar, bay salt, and common salt—of each 2 lb.; saltpetre, ½ lb.; water, 1 gallon. Boil gently and remove the scum. Another pickle is made by mixing 12 lb. of salt, 2 lb. sugar or treacle, and ½ lb. of saltpetre, with sufficient water to dissolve the ingredients. Hams may be cured as follows:—Mix 5 oz. nitre with 8 oz. of coarse sugar. Rub this in the ham, and in twenty-four hours rub in 2 lb. of salt, and in fourteen days 2 lb. more. This will cure a ham of 20 lb. weight, and it should lie in the salt four or five weeks.

A. H. Johnson.—Kindly specify to us the exact particulars you wish for regarding the dispensaries. The subject is a wide one; but if you will inform us of your wants, we shall endeavour at once to aid you to the best of our ability.

Diamond.—We agree entirely with your remarks, and may direct attention to the subject at an early date.

* It is, to say the least, highly questionable, if earth is any such safeguard or possesses any destructive power over disease germs. Recent researches seem to show that disease germs may retain their powers after burial for long periods.—Ed. H.

* Our own belief is that such germs cannot be *destroyed* by any filtration whatever. We shall be glad to publish any evidence bearing on this important point which our correspondents may send us.—Ed. H.

SANITARY.

Scientist.—Precipitation processes for sewage are well known; such as that by lime, magnesia, sulphate of iron, or alumina, &c.

D. O.—A very decided connection has been proved to exist between dampness of the soil and the occurrence of consumption. Dr. Buchanan's reports show this very clearly; in such a case the dampness may be considered a condition rather than a cause of the disease.

MEDICAL.

P. P. M.—See and follow advice given to "Dunedin" in No. 48 of Health. Beware of quacks, of whom you seem to have had some experience in Glasgow. You suffer from no disease, but only require time and attention to your general health to regain your vigour.

T. E. M. S. D.—By your own account you are in good health. What you complain of is in reality a sign of health. You have evidently started with the idea that you suffer from some ailment; and it is this morbid idea that is worrying your mind. Cold sponging, active exercise in the open air, and nourishing food, but without stimulants, should cure you. You are in a fair way to fall into the hands of quacks if you continue to think of yourself as you at present do.

Innocence.—Not usual, but often occurs. Use a little carbolated vaseline, or visit a surgeon, who will be able to reassure you that all is well.

Hairy Face.—1. Plain diet and avoidance of chills, and the following powders:—Sulphide of lime, 24 grains; sugar of milk, half an ounce; mix. Keep in a well-stoppered bottle and take as much as will cover a sixpence every four hours. The following lotion may also be found useful:—Flowers of sulphur, one teaspoonful; glycerine, two tablespoonfuls; rose water, half a pint; mix. 2. There is no certain method of removing hair permanently, except an electrical form of treatment. In your case we should advise you to shave the whiskers for some time.

An Anxious Inquirer.—Your case is one which certainly demands sympathy, but you ought to be aware that by taking aperient medicines to the extent you do, you are simply aggravating the evil of which you complain. We should advise you to thoroughly overhaul the general condition of your health. In all probability enemas should be tried for a time, at least, and, in place of other medicines, we should recommend you to take one drop of the tincture of nux vomica three or four times a day. If this is not followed by good results, you might try the effect of morning doses of mineral waters, such as Æsculap or Friedrichshall. We warn you, however, that should your ailment continue to resist simple treatment, you must place yourself in the hands of a physician. We warn you once more of the danger of trifling with purgative medicines. An increased amount of open-air exercise might also be advisable.

Roderick.—1. Tonic not to be continued at present; its only use is that of bracing up the system. Leave it off and attend to general health. 2. See advice to "Mona" (No. 47, Health). Use injection each evening for a time. 3. Irritation due to thread-worms. 4. Simply attention to general health and avoidance of all stimulants. See to your drinking water (as to its purity) in the East; about ½ oz. tincture perchloride of iron should be used as an injection to the pint of water.

A Methodist.—Take cod-liver oil (a dessertspoonful daily after food) for a time, and inhale vapour arising from a pint of hot-water to which ten drops tincture of iodine have been added. Do this thrice daily for a few days and note result. Chronic catarrh, like yours, will only leave you when your general health is established. A change to the sea would likely effect a cure.

T. H.—See and use lotion for hair recommended to "Russell" in Health, No. 48. Try tepid sponging if you find the cold to disagree with you.

W. C.—Such an affection is rather a symptom than a disease. We advise you to see a physician, who will examine the secretion, and who can alone by such examination discover a cause. Glad to send you address of a reliable authority, if desired, on receipt of stamped addressed envelope.

Burnbank.—Our best advice is that your friend should consult the surgeons of one of the Glasgow Eye Dispensaries. No advice of ours can avail in such a case, as the condition is one requiring treatment at the hands of an eye-surgeon.

Carl St. John.—Don't be either morbid or disheartened. You will get quite well in time. Read and follow advice given to "Dunedin" in Health, No. 48. Write again in three weeks or so, and let us hear how you are. Cases like yours are common, but get quite well under above treatment.

J. B. B.—1. Yes; abstinence very desirable. 2. Yes; with a difference for the warmer season. 3. No preventive except strict attention to general health, looking to purity of drinking water, and taking quinine as a tonic, if out of sorts. 4. Quinine, certainly; also Fellows' "Syrup of the Hypophosphites," and a few aperient medicines—Lamplough's "Pyretic Saline" is a safe saline aperient. As a disinfectant try "Sanitas" or "Chloralum."

Horatius.—We fancy that Bournemouth or Dawlish comes as near your wants as any place. Yours is a difficult case to suit. Rothesay, on the Clyde, should certainly suit you in spring and summer. In winter, St. Leonards and Hastings; or have you made a special survey of the Isle of Wight? There, we fancy, you would meet with one or more places to suit you. Glad to assist further, if necessary.

D. W.—See advice to "Carl St. John" in present number of Health.

Battery.—We should recommend you to try a Pulvermacher's Chain Electrical Battery (see advertisement of these appliances in Health). They are thoroughly genuine, and we have proved them to create a strong electrical current. Clothe the loins in addition warmly with flannel, and take hot salt water baths occasionally.

C. A. M.—We cannot undertake to search Health for you, and to forward you the number containing a reply to your question. Just consider what an existence ours would be, if all our correspondents were as unreasonable in their request as you are.

Veto.—You are in a low state of health, and suffer from a form of chronic cold in the head. We advise you to try a change to the seaside for a time. This, with nourishing food, is the most effective and speedy cure. See to your general health. Take a little "Æsculap" water each morning, and you might also try 10 drops *Fer Bravais* thrice daily in water after food. Inhaling the steam of a pint of hot water to which a teaspoonful of "Friar's Balsam" has been added will also do good, but beware of cold after so inhaling.

Jane Rose.—You must describe your symptoms more fully, also mode of life, habits, &c. The cloudy appearance may itself be of no great importance. Try first the effect of avoiding all stimulants, and of drinking plenty of potash water. Glad to be of further service.

McCulloch.—There is no specific for "growth," save nutritious food, judicious exercise (to stimulate the appetite), and a change of air. We should advise you to see to your food, to try dumb-bells or bar-exercises, cold bathing, if it agrees, and open-air walking daily.

R. D. J.—See to your general health. Do not eat late at night. Try a little "Æsculap" mineral water each morning, and take a little "Pepsine" after meals. Use plain Vaseline as an outward application for the irritation, and if not better write again. Remember that in a case like yours the condition of the bowels should be your first concern. A surgeon might assist you by advice as to the irritation of which you complain.

N. E. V.—Yes; you will get quite well in time. Don't be anxious, even if what you complain of should occasionally persist. It is often a sign of perfect health. Persevere with the treatment we ordered you.

Pænus.—The case you name is eminently one for medical advice. Only in this way can benefit and relief be obtained. A doctor will be very sympathetic with such a case, which, occurring as it does at such an age, demands early attention. This is our earnest advice to you, and you should follow it at once. The condition complained of may readily enough be ameliorated.

A. B.—No; we regard your symptoms as due to digestive disorder. Our advice to avoid strain is simply to give heart and all other organs a rest. When your general health improves, your symptoms will leave you.

Conway.—Don't be anxious; read and follow advice to "Dunedin," in Health No. 48. You will get quite well by attending thereto.

North West.—Yours is one of those common cases in which overwork and over-exertion are now bringing in their harvest of ill-health. All you need is rest, careful living, avoidance of exertion, and nourishing but non-stimulating food. Take "Pepsine" with your food for a time, and feed on eggs, milk, nourishing soups, fish, &c. You will get quite well by attention to the details of your daily life. A change to the sea for a time might do you much good. We can send you the address of a reliable medical authority, if you wish it, on receipt of stamped addressed envelope.

Victim.—Let your food be largely liquid for a time. Eggs, milk, with soups, &c.; light boiled white fish, toast, &c. Give up tea and coffee entirely. By giving the stomach rest for a time, and by also taking a little "Pepsine" with your food, you will get well. Let us hear how you are in a few weeks.

R. S. L.—The signs in the prescription (as you give it) respectively mean, distilled water one drop; yeast 100 grains; and cane sugar 200 grains. It is possible that instead of "one drop" the distilled water may be one quart, and the "grs." of your prescription may be *grammes*, if it was taken from a foreign source. A "gramme" is nearly sixteen grains English weight. Your writing is by no means distinct.

[*Continued on page* 384.

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Cutaneous.—Sleep with feet raised on a pillow, avoid constipation, rest as much as possible, and wear an elastic stocking. Standing much, is against you. Use Carbolated Vaseline for the eruption.

Roman.—No; will do no harm; but it is against all health rules to continue to take any tonic for any length of time. You should certainly be able to do without the tonic now.

R. Johnston.—Rest; careful living; no stimulants; fifteen drops *Fer Bravais* in water, thrice daily; and weak injections of "Condy's Fluid" and tepid water—the water to be merely coloured, and nothing more. See also to state of bowels.

O. Carpenter.—See and follow advice to "Dunedin" in Health, No. 48.

G. J.—The "Extract of Soap" is not meant to wash your skin. This may be the cause of your troubles. Give up the practice, and sleep with hands encased in gloves after smearing them well with pure Vaseline.

Carbine.—No need to despond. Continue the tonic for a time, and see advice to "Dunedin," in Health, No. 48.

Unfortunate.—If you wish a medical address, you must send stamped addressed envelope. See advice to "Dunedin," in No. 48 Health. You are slightly out of sorts, and require bracing up. See to your food, which should be light and non-stimulating. Avoid constipation.

Toby.—No signs of mischief or disease. Try the effect of the tonic recommended to "Dunedin," in Health, No. 48. If not better in a week or so, write again. With the medical opinion we quite agree.

Union.—Yes; you will get quite rid of your ailment. We advise you to leave off the medicine for a time and to resume it at intervals. Guard against cold; live generously; rest as much as possible, and don't be nervous over your ailment. Do not trouble with any quack medicine. Take iron and quinine pills as a tonic when you leave off the medicine. Resume it again as above indicated after, say, three weeks' interval; and let us hear how you are then.

Rose Villa.—1. No; moderate rubbing will do no harm. 2. Yes, certainly; try *Fer Bravais* as above ordered to "R. Johnston" for a short time.

Llewelyn.—See advice to "Dunedin" in Health No. 48. If your general health is good, you need not fear taking the step you mention.

Sensitive Thomas.—We cannot say more than simply to recommend you to exercise cleanliness, by means of hot baths and frequent washing; to live quietly (no stimulants), and to attend carefully to your digestion. A suspensory bandage should be worn.

Black Bess.—Yes; the pill is good for the affection you name, only we should strongly recommend you to try a vegetable diet, eating fruits, &c., and by all endeavours leave off the habit of taking drugs continually. Try a little "Æsculap" water in the morning for a time; but intelligent experimentation with diet is your best and safest course.

L'Homme Anglais.—The spots are simply the result of a little weakness. You should see that your food is generous and nutritive enough. Lemons, so used, do not injure the stomach. We recommend you to try a little good claret and water. Frankly, we know of no so-called "temperance" beverage we can recommend. Have you tried Feltoe's "Spécialité" Lime Juice?

Z. Y. X.—Give up tea and coffee; take milk and bread, and light soups only for a time, and give your stomach rest. Try also a little "Pepsine" taken after food, and rest after eating. We fear your trade is a little against you. [Will you oblige us by telling us exactly what you know to be put into bread in the course of manufacture? What you say interests us very greatly.]

Como.—We see no cause for alarm. Such a symptom is common enough after bronchitis, if the mucous membrane is tender, or probably the throat alone was the source of what you observed. The hospital hours are, we believe, in the morning or at midday. You should make an effort to attend these, if you wish for an opinion. Inquire at any hospital where physicians for out-patients attend. No need specially to go to Brompton. Try St. George's, as being near your district.

Fiwick.—See that you do not sleep on your back. Tie a reel, or some such body, in the middle of your back, so that if you do roll over, it will waken you by the discomfort it causes. Sleep on a hard mattress, and see to the ventilation of your bed-room. The change to the country will do you good.

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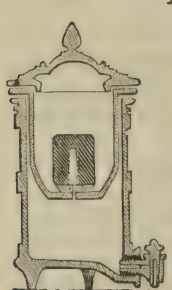

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 21, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

Returning to the question we recently discussed in our "Notes" (see Health, No. 48), "Can artificial injuries be transmitted to offspring?" we have received a considerable number of replies to our request for illustrative examples which might be known to our readers. Many of these examples have been derived from "hearsay" evidence, and the writers frankly say, in most cases, that they cannot vouch for the absolute correctness of the statements they forward. In other cases, the recital of personal experiences given by correspondents is defective, regarded merely from the point of view of scientific evidence. A few cases only satisfy the requirements of the scientific inquirer, and one or two of those cases we may quote for our readers' instruction.

✣ ✣ ✣

One correspondent gives the following particulars:—When thirty-three years of age, he received an injury in the upper part of the left ear, splitting the ear completely in two. It was surgically dressed, but naturally left a scar; a very decided *notch* remaining in the injured part. Four years after the accident our correspondent married. The first child of the marriage was a daughter, and this child presented on her left ear a *notch* exactly resembling that artificially produced in her father. None of the children subsequently born exhibited any such mark. In this case, therefore, there is the clearest evidence of an inherited injury. Another correspondent tells us of a case in which the male child of a relative was born with the mark of a scar on his neck, this scar corresponding to one which the father exhibited as the result of an injury received six or seven years before the child was born. A third writer recounts the presence in a female child of a deformed little finger, which corresponded to such a finger artificially produced in the father—the hand, however, which bore the deformity in the child being the left, while the injured hand of the father was the right. From these examples alone, it appears quite certain that the question "Can artificial deformities be transmitted?" must be answered in the affirmative.

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This topic opens up before us a very interesting study in "inheritances" and in the laws of the science of "heredity." A vast amount of observation and reasoning is required, before the influence of parentage on offspring can be satisfactorily determined. In the cases above quoted, as well as in the American case (from *Science*) to which allusion was previously made, it is the father who transmits the injury. We have no example at hand in which an injury or deformity of a mother has been transmitted, although, as is well known, the mental impressions of the mother may affect the offspring. One curious point in "heredity" is the transmission of peculiar *habits*, and the reproduction, in the children, of even the tricks of manner and peculiarities of the parents.

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Mr. Darwin has noted many interesting examples of such cases. We have seen the handwriting of a father imitated by a son, and we know two brothers whose handwriting is exactly similar, although they are not associated in any way, either socially or in business. "Gait, gestures, voice, and general bearing," says Mr. Darwin, "are all inherited, as the illustrious Hunter and Sir A. Carlisle have insisted." One of the most curious examples of inherited tricks is given by Mr. Darwin. A boy acquired the habit, when pleased, of rapidly moving his fingers parallel to each other, and when excited, of raising both hands, with the fingers still moving, to the sides of his face on a level with the eyes. When an old man, the habit was still practised involuntarily, although, from its absurdity, trouble was taken to conceal it. This individual had eight children. One, a girl, at the age of four and a half years, when pleased, moved her fingers in exactly the same fashion as did her father, and, when excited, raised her hands to the sides of her face as he was in the habit of doing. Imitation here, as Mr. Darwin adds, was "out of the question." A father, when asleep, was in the habit of lying on his back with the right leg crossed over the left; his infant daughter in the cradle followed exactly the same habit, although an attempt was made to cure her.

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The above notes merely open up, but do not satisfy, the craving to know more of the operation of the mysterious law that "like begets like." Doubtless the science of the future will enlarge our views and notions of the laws of inheritance; but, in the meantime, intelligent observation may effect much good in placing before scientific men illustrations and examples, from a study of which further advances in our knowledge may be made. We may only add that readers who wish to place on record their family histories, and to make an interesting study of family characters, cannot do better than purchase Mr. Galton's "Life History Album," and his "Record of Family Faculties," both published by Macmillan & Co., London. Mr. Galton offers prizes to the amount of £500 "to those British subjects, resident in the United Kingdom, who shall furnish him, before May 15, 1884, with the best extracts from their own family records." Here is a chance for intelligent appreciation of family histories and individual characters which should not be lost sight of by the public.

✣ ✣ ✣

We are glad to note that the "National Health Society" propose to inaugurate a conference on "School Hygiene," during the International Health Exhibition period. It has been arranged that papers on various subjects relating to school-health will be read, discussion being invited. All teachers and others interested in the subject, and who may propose to take part in this interesting conference, are invited to address the Secretary of the National Health Society, 44, Berners-street, London, W.

A correspondent points out that the common idea of the infectious nature of consumption was long ago ventilated in Smollett's "Humphrey Clinker." "You won't deny," so runs the passage, "that many diseases are infectious; even the consumption itself is highly infectious. When a person dies of it in Italy the bed and bedding are destroyed, the other furniture is exposed to the weather, and the apartment whitewashed before it is occupied by any other living soul." Clearly, in Italy, long ago, they had sound ideas, at least, on the subject of disinfection.

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A highly interesting series of statistics dealing with a matter of high social importance has been compiled by Mr. Alexander McDougall, of Manchester. Dealing with the causes of Manchester pauperism, Mr. McDougall shows that while 51·24 per cent. of Manchester pauperism is produced by drunkenness, 48·76 per cent. of the cases is due to other causes. One-eighth of the pauperism of the township is caused by infirmity and by the circumstances inseparable from old age, but involving no discredit to the poor of this first class. One-seventh of the cases of pauperism is due to disease or accident—many of these cases having been supported by friends until relief became absolutely necessary. The third class includes cases in which the head of the family, although willing to work, could not obtain employment. Only one-fortieth of the cases are classified under this head. Idleness and want of thrift, *not* associated with drunkenness or with immorality, forming a fourth class, did not appear to have acted as a cause of pauperism in a single case. Drunkenness in men caused nearly one-fourth of the entire pauperism; and, curiously enough, men employed in skilled labour appeared to illustrate this source of poverty in the proportion of four to three of those employed in unskilled labour. The drunkenness of women caused one-twentieth of Manchester poverty; and in a seventh class Mr. McDougall includes pauperism caused in the *widows and children of drunkards*. To this latter cause one-fifth of the poverty of that city is alleged to be due.

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It is deplorable to read regarding this latter class that most of the husbands had been skilled workmen earning large wages. The widows and children of well-conducted husbands contributed one-sixth to the total pauperism, and in this eighth class we note that the unskilled husbands predominated over the skilled, thus reversing the position of matters in class seven. Widows of well-conducted husbands, but burdened with drunken sons, contributed 1 per cent. to the total cases; and a tenth class included women reduced through bad conduct, but not drunkards. The proportion of these latter cases is not given.

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There is "food for thought" contained in this roll of pauperism. We see plainly enough that while drunkenness is not responsible for all the poverty, it may yet be credited with causing its own unhealthy share of misery. Mr. McDougall has added to his labours an interesting observation regarding hereditary influence on pauperism. It is often alleged that the children of paupers tend to become paupers likewise; but in the Manchester statistics, the proportion of persons (over sixteen years of age) born paupers, and who applied for relief, did not reach 1 per cent. of the total number of paupers. It is much to be desired that statistics as laboriously and carefully compiled as these of Mr. McDougall's should be collected by way of illustrating the causes of pauperism in other cities and towns.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE MEDICAL USES OF HOT WATER.

By Dr. Andrew Wilson.

The proverbial phrase which maintains the inadvisability of being kept in hot water, does not certainly apply to the uses of this beverage in medical practice. As a matter of fact, hot water has been found a valuable remedy in the treatment of many diseases, as well as in the cure of simple ailments.

Dr. James H. Salisbury, of New York, announced in 1858 the result of a series of elaborate experiments, which he had conducted with a view to ascertaining the exact uses of hot water in the cure of disease. Dr. Salisbury, experimenting on foods in their relation to the relief of ailments, discovered that hot water of a temperature varying from 110° to 150°, was highly serviceable in relieving painful conditions induced by improper feeding. He found that this beverage, diluting the ordinary fluids and secretions of the digestive system, affected the work of the liver and kidneys, and produced results of the happiest kind in the restoration of health. Recently, Dr. Cutter, of New York, has admirably summarised the methods of using hot water for the cure of disease. He tells us that the water must be really hot, and not merely lukewarm. It must possess the temperature above noted. If lukewarm, the water will only excite vomiting; whereas, when really hot, the water appears to soothe the irritable lining membrane of the stomach and bowels, and even in cases of bleeding to produce, as indeed physiology has shown, contraction of the blood-vessels and cessation of the latter complaint.

The quantity of hot water to be taken at a draught, according to Dr. Salisbury, varies from half a pint to one pint or more at one drinking. The test of benefit being derived from the use of hot water is said to be that derived from the kidney-secretion, which should be pure, free from odour and deposit. Regarding the times at which hot water should be taken, one to two hours before each meal, and half an hour before retiring to rest, are stated as the periods most suitable for its administration; while the water must be sipped, and not taken so fast as to cause distension of the stomach. Dr. Cutter tells us that from fifteen to thirty minutes may be consumed in the draught of hot water. This form of hydropathic treatment, according to the authorities just named, should be practised in cases of digestive troubles for a period of six months or thereabouts, and Dr. Cutter further adds that as the practice promotes health, this hot-water treatment may be practised by people in health throughout life, as a means of internal cleanliness. Regarding the amount of liquid to be taken with a meal, not more than eight ounces has been prescribed as the regulation quantity; a larger amount tends to dilute the gastric juice to too great an extent.

Various additions may be made to hot water by way of rendering it palatable, although it may be mentioned persons accustomed to drink hot water, in time learn to like its taste and to really enjoy their beverage. In cases of intense thirst, a pinch of chloride of lime or nitrate of potass might be added by way of allaying the irritation. For constipation, a teaspoonful of sulphate of magnesia or half a teaspoonful of taraxacum may be added to the hot water. For diarrhœa, cinnamon, ginger, and

pepper may be boiled in the water, and the quantity of the liquid lessened.

Dr. Cutter, in summarising the effects of drinking hot water, alludes to the improvement in digestion which is duly noted. The thirst and the dryness of the lining membrane of the digestive canal disappears in a few days. The skin assumes a healthy appearance and condition, and acts freely in getting rid of the waste matters of the frame. He also adds that in cases of drunkenness, the drink-crave is materially lessened and may be cured by the use of hot water.

There seems to be little doubt that hot water, judiciously used, unquestionably forms a valuable means of treating many common intractable diseases. In cases of obstinate indigestion, it is undoubtedly well worth a trial. The secretions of the digestive system which become disordered in this painful malady, are diluted by the water, washed from the surfaces they irritate, and excreted rapidly from the body. Indeed, the process of eliminating or getting rid not merely of the ordinary waste of the frame, but likewise of disordered secretions, is remarkably accelerated by this form of treatment. Sufferers from indigestion might with advantage be recommended to follow the advice of Doctors Salisbury and Cutter. The former said, "If I were confined to one means of medication, I would take hot water;" and Dr. Cutter adds that whilst Dr. Salisbury has drunk hot water for twenty-five years, he can himself testify from his own personal experience of the truth of the Salisbury treatment. The simplicity of the treatment forms one of its highest recommendations, and we have, therefore, pleasure in presenting the above summary to the readers of Health, in the hope that it may possibly prove useful in the treatment of some of the common ailments to which humanity is liable.

DISEASE GERMS AND THEIR RELATIONS.

By Dr. H. Fol of Geneva.

(Translated from the *Journal de Genève*.)

SECOND PAPER.

From a practical point of view, we may divide microbes or germs into three classes—those which are useful, those which seem to have no effect, and those which are positively harmful. We have already mentioned the first class; the second are very numerous; for, to say nothing of the many species which inhabit all the recesses of nature and concern us only very indirectly, we undoubtedly support quantities of them in the cavities of the surface of our bodies and of our digestive canal. Nothing equals the astonishment and confusion of many persons, when, by a turn of the hand, the microscope shows them all the various forms which live at their expense. They include all kinds, from the harmless *Spirillum* in the saliva, to the *Leptothrix*, which is the most active agent in the decay of teeth. But all this is on the surface: the interior of our bodies is completely free from them; and it may be said that in our organisation every means is taken to defend the entrance to the organs from ordinary microbes, and to remove them if they succeed in forcing entry. There is, however, a certain number of species which have the sad privilege of being able to penetrate and support themselves in the body of a subject predisposed to receive them. The microbe of "blood-poisoning" or *septicæmia* enters only through an open wound, while those of consumption and leprosy attack directly the lungs or mucous membranes of the persons afflicted. The surfaces of the lungs and of the alimentary canal seem to be the customary points of attack for the organisms which cause various infectious diseases.

Our organisation is like that of a civilised nation, whose citizens are represented by our cells. The skin becomes broken (the wall of China discloses a breach), and immediately there are hordes of savage microbes which enter, at strife with the national soldiers (our cellular tissues). The microbes multiply, and scatter around a poisonous liquid; the cells combine, and try to starve their dreaded enemies, and to repair the breach. The battle-field is small; but the victory is warmly contested, and the sight has its exciting aspect. The result of the struggle depends on the number of combatants and on the energy of the competing forces. The antiseptic treatment of wounds, aims to reduce as much as possible the number of microbes which enter, and to retard their development; for no one familiar with the subject would think it possible to entirely exclude them. How interesting it would be to trace the events of the contest between the organism and its invaders in the case of an epidemic disease! Science, we hope, will soon be in a condition to give us this history.

The diseases which have been traced with certainty to parasites are as yet few in number; they may be counted on the fingers. To discover the nature of a disease, there must be a uniformity of experiments and evidence, of which the public, and even the majority of specialists, take no account. Nothing is easier than to examine with a microscope small parts of the various organs of a dead body, and attribute the fatal disease to the germs found under these circumstances. These would-be discoveries, soon disproved, have only the effect of causing the public to mistrust useful investigations, and cast undeserved discredit on serious work performed in the most methodical manner. To know a parasitic disease, it is not enough to have seen the pathogenic microbe. It must have been removed from the other microbes, and cultivated through a long series of generations in sterilised soups; animals must be inoculated at various times with these pure types, and each time all the symptoms of the disease whose cause is sought must be observed. In this way Dr. Koch has revealed the germs of charbon and tuberculosis; and these discoveries have been granted to science, after being examined by a number of investigators, among them Professor d'Espine. Long and very careful cultivation was necessary to show, after Dr. Haltenhoff's interesting paper on this subject, that the juice of the *jequirity* owes its extremely virulent properties only to the microbes which it contains. We know quite satisfactorily the organisms which produce leprosy, erysipelas, and charbon; but for diphtheria, typhus, intermittent fevers, and many other diseases, the agents are still undiscovered.

EXAMINATIONS, SCHOOLS, AND HEALTH.

By Geo. G. Chisholm, M.A., B.Sc.

THIRD PAPER.

I come now to what is, after all, the most important part of our task—a consideration of the remedies that may be suggested for the unhealthy strain that is at present but too apparent in many parts of our educational system. In approaching this part of the subject, I am fully conscious of the difficulties that stand in the way, and of the danger of suggesting remedies that may be open to many objections. But with regard to this latter fear, I have the less

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

hesitation in making such suggestions as seem to me suitable, since, if unsound, they can be amended. It is the rule of human progress that the errors of one mind should be corrected by the insight of others.

Further preliminary considerations would be out of place here, and I will therefore proceed to treat the subject on which I have entered in detail, and in doing so I will begin with the remedies that may be proposed for the evils connected with our elementary education, and especially that given under Government direction and control in our Board schools. It seems to be perfectly plain from the extracts given in my last paper, that the worst evils in that part of our educational system are due to the method adopted for applying the principle of payment by results. Now, I am not in the mean time going to suggest anything so utterly impracticable as the entire abandonment of this principle, even though it appears the principle has been abandoned in Upper Canada, after being once adopted. I am well aware that the British public, when it spends any money, will insist upon its right of knowing how it is spent, and with what result, in the direction aimed at by the expenditure. And the British public is quite right, provided it can make quite sure by any exact system of measuring and testing that the money shall be properly expended for the purpose to which it devoted. But there is something almost touchingly simple in the assumption that the easiest measure to apply actually measures what we want to have gauged. And that is practically the assumption made in our present mode of applying the principle of payment by results. It is as if a timber merchant should estimate the value of his yard by simply applying the measuring-rule to the logs lying in it, without considering whether the timber was deal, oak, or walnut. Even if we grant the unassailableness of the Sherbrookian maxim as to placing a man's ear "within the ring of pounds, shillings, and pence," it is surely important to consider what it is exactly that placing a man's ear in that position will induce him to do. Now, what the method hitherto adopted for applying the principle of payment by results induces him to do, we have already seen; and there is hardly a more general complaint among inspectors of schools than that the system of driving as many children as possible through the standards in order to earn as high a grant as possible is a system wholly adverse to really good education. This, however—namely, a really good education—is precisely what the British public wants to pay for and ensure.

I am glad to acknowledge that the last code issued by the Education Department has, in answer to the representations repeatedly made by the teachers and inspectors of schools, introduced a principle of awarding grants more likely to secure satisfactory results than that hitherto chiefly relied on. It institutes what is called "a merit grant," which is to be awarded in varying amount according as the Inspector, "allowing for the special circumstances of the case, reports the school to be fair, good, or excellent, in respect of (1) the organisation and discipline; (2) the intelligence employed in instruction; and (3) the general quality of the work, especially in the elementary subjects.

Now, all this is good, so far as it goes. It furnishes an inducement to the teacher to give up the driving system for dull pupils in so far as he sees that to be prejudicial to the general excellence of the teaching, on the strength of which the inspector is to award the merit grant. But while instituting this better principle, the code still retains the old obnoxious principle of causing the grant to be effected by every individual pass, and in so doing retains that which will tend to the perpetuation of an undue and unhealthy strain on both teacher and pupil. Among the other grants still to be awarded is "a grant on examination in the elementary subjects determined by the percentage of passes in the examination at the rate of 1d. for every unit of percentage."

"My lords," had they been educated at Board-schools, might, perhaps, have managed to make their meaning a little clearer; but I am informed that what that rule means is this, that this grant will be equal to 1d. per cent. of passes multiplied by the average attendance. Thus, if a school have an average attendance of 100, and 80 of these pass, then the amount of the grant will be a hundred times 6s. 8d. Obviously, this makes the passing even of a single child a matter of some importance to a teacher, and hence the encouragement to unhealthy driving still remains.

The first remedy that I would suggest, therefore, is the abolition of the mode of awarding grants, by which the amount of the grant is affected by every child that passes. The satisfactory expenditure of the money laid out by the country on elementary education might be sufficiently well ensured under a system of awarding grants that gave an adequate inducement to teachers to exert their energies, but offered no inducement, or as little as possible, to exert them in a wrong direction. Now, we may readily believe inspectors of schools when they tell us that, although an exceptionally high percentage of passes is no proof of generally good teaching, yet where the teaching is really good the percentage is never a low one. On this ground, it would be quite reasonable to make the amount of grant dependent to some extent on the percentage of passes, though it should not be affected by every individual pass. Probably it would answer all the ends in view in a rough but sufficiently satisfactory manner to vary the amount of the grant, not according to every unit of percentage in the passes, but according to larger intervals in the percentage. Where only 60 per cent. passed, a relatively small grant might reasonably be awarded; where 70 per cent. passed, a higher grant; and a still higher for 80 and 90 per cent.; while no difference was made in the amount of grant for any increase in percentage between these intervals. The proper intervals of percentage to determine the rise in the grant, and the rate of increment, might be fixed by their lordships in council, after consultation with experienced teachers and inspectors of schools.

I may point out that if this suggestion were adopted, it might help to pave the way for the remedy demanded by the teachers themselves, in a letter recently sent to the Education Department, in reply to one written at the desire of their lordships with reference to the representations that had been made to them on the subject of overwork in schools. This letter of their lordships, while containing

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

many excellent remarks well worthy of attention, throws the blame of such over-pressure as has been shown to exist not on the code itself, but on "the inconsiderate manner in which its provisions are used for the purpose of obtaining high grants." But to this the Executive Committee of the National Union of Elementary Teachers make the unanswerable reply, that so long as high grants can be obtained by over-pressure, "and in many cases in no other way," and so long as human nature remains what it is, managers will demand, and teachers will be compelled to obtain, high grants.

What the teachers, then, seek to obtain as a remedy for the irresistible temptation to over-driving, is liberty to arrange their pupils in classes according to their own judgment. Under the present rules, a scholar once placed in a standard must, except in special cases, and these not selected on the judgment of the teacher, be raised a standard every year, however much he may fall behind his fellows. What the teachers claim, is the right to use their own judgment in putting their scholars every year into the classes suited to their needs and capacities. It seems to me that this is a right that ought to belong to the teacher. No one can be better fitted, as a rule, than the teacher, to say for what class a child is suited. Yet we can easily understand the reluctance of their lordships to allow a claim by which they fear lazy teachers would be enabled to earn more than their proper share of the grant by keeping children unduly behind. If, however, the principle above suggested for the awarding of the grant were adopted, there might be less hesitation on their lordships' part in acceding to this demand of the teachers, since the large intervals of percentage by which the proportion of the grant would then be determined, would not be so easily affected by the keeping back of one or two children who ought not to have been kept back. The teacher would have the liberty he claims to keep back those not fit for promotion, but he would not be under the same temptation to retard the advancement of those who ought to be advanced.

Treatment of Warts.—A plaster of black soap, applied each night for a fortnight, according to M. Vidal, will soften a wart so that it may be scraped off. The treatment by M. Cellier is to transfix the principal wart with the point of a pin, the head of which is then to be held in the flame of a candle until the wart is destroyed; it will drop off in a few days. The remaining warts will then usually disappear.—*La France Médicale.*

Antiseptic Sponge.—The sponge is first well shaken and beaten to extract as much as possible of the sand, broken shells, &c., which it always contains. It is then washed in warm water, and, after being well pressed, is left to soak in a solution of permanganate of potash or Condy's fluid. The solution contains 3 per cent. of permanganate, and the sponge remains in it three, four, or five hours. The sponge is next well washed and bleached. For this purpose it is placed in an earthenware vessel filled with a solution of hyposulphite of soda (29 to 30 per cent.), to which is added dilute hydrochloric acid (40 per cent.), which causes a copious evolution of sulphurous acid. In the course of ten or fifteen minutes the tissue of the sponge is thoroughly bleached. It is washed in a brisk stream of water, and then allowed to remain for a few hours in a 5 per cent. solution of carbolic acid. It is next wrung out, and before being put away is steeped in a 2 per cent. solution of salicylic acid, which thoroughly preserves it. The sponge thus treated is pressed and dried slowly, and stored in glass cases quite closed and exempt from dust of all kinds.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

ORIGIN OF INDIGESTION.

(From the *Popular Science Monthly.*)

FIRST ARTICLE.

Before our ancestors colonised the colder latitudes of this planet, the equatorial regions had for ages been inhabited by men or man-like four-handers. The influence of this long abode in the tropics still asserts itself in many peculiarities of our physical constitution. We are but half acclimatised. Wolves are weather-proof; bears and badgers have managed to inure themselves to the miasma of their winter dens; but the primates of the animal kingdom can neither endure cold nor breathe impure air with perfect impunity; and of most of our civilised fellow-men, as well as of savages and all the species of our four-handed relatives who have thus far been wintered in northern menageries, it may be said that the sensitiveness of their lungs contrasts strangely with the tough vigour of their digestive organs.

In proportion to his size, a rhesis baboon eats more than a wolf; between morning and night a ceboo monkey will devour his own weight in bananas, and, where the cravings of a naturally vigorous stomach are increased by the stimulus of a cold climate, it seems almost impossible to surfeit a savage with palatable food; his appetite is the faithful exponent of his peptic capacity, and before the fauces positively refuse to ingest, there is little danger that the gastric apparatus will fail to digest. Manifold and enormous must have been our sins against the dietary code of Nature before we could succeed in making indigestion a chronic disease. Deviations from the chemical standards of her *menu* are insufficient to account for her wrath. With all their unmistakable structural evidences of a frugivorous purpose, our digestive organs have been permitted to adapt themselves, not only to a carnivorous and herbivorous diet and various innutritive substances, but to a considerable number of positive poisons. The Yakoots live on fish and seal-bladder. The Shoshones stick to bull-beef. The Namaqua Hottentots (who cannot plead the exigencies of a cold climate) subsist almost entirely on venison. Several tribes of Northern Brazil eat clay with comparative impunity. Our Saxon forefathers added beer to venison and beef; and when they took to in-door life, the stomach protested only by proxy,—an utterly wrong diet led, not to dyspepsia, but to scrofulous affections. Excess in moderately unwholesome viands has to be carried to a monstrous degree before the after-dinner torpor turns into a malignant disease. The stomach of a nomad seems to acquire a knack of assimilating a modicum of the ingesta, and voiding the rest like so much innutritious stuff. Dr. Robert Moffat saw a Bushman eat twenty pounds of hippopotamus liver and a

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

bucketful of broiled marrow, besides handfuls of ground-nuts, parched corn, and hackberries—all within 24 hours. In the provincial capitals of Northern China, where banquets of forty courses are *de rigueur*, convivial mandarins learn to devour a quantum of comestibles that would torpify a boa-constrictor. Eating matches of fourteen and fifteen hours did not prevent Vitellius from acquiring distinction as a wrestler.

Daily alcohol-fevers, combined with pepper and mustard inflammations, would ruin the stomach of an ostrich; but in favour of the unfeathered biped, Nature accepts such vicarious atonements as gout and dropsy. Thousands of crapulous old Bavarian beer-swillers, who are hardly able to walk, are still able to digest their food. Indoor life and want of exercise then added their quota of provocatives; but where the lungs would have rebelled after seven protests, the stomach forgave seventy-seven times. Mediæval prelates, squires, and aldermen tried in vain to exhaust the patience of the long-suffering organ.

But their descendants finally solved that problem. To the alcoholic stimulants of the ancients we have added tea, coffee, tobacco, absinthe, chloral, opium, and pungent spices. Every year increases the number of our elaborately unwholesomely-made dishes, and decreases our devotion to the field-sports that helped our forefathers to digest their boar-steaks.

We have no time to masticate our food; we bolt it, and grumble if we cannot bolt it smoking hot. The competition of our domestic and public kitchens tempts us to eat three full meals a day, and two of them at a time when the exigencies of our business-routine leave us no leisure for digestion. At night, when the opportunity for that leisure arrives, we counteract the efforts of the digestive apparatus by hot stove-fires and stifling bedrooms. Since the beginning of the commercial-epicurean age of the nineteenth century, the votaries of fashion have persistently vied in compelling their stomach to dispose of the largest possible amount of the most indigestible food under the least favourable circumstances.

That persistence has at last exhausted the self-regulating resources of our digestive organs. But even after such provocations the stomach does not strike work without repeated warnings. The first omen of the wrath to come is the *morning languor*, the hollow-eyed lassitude, which proves that the arduous labour of the assimilative organs has made the night the most fatiguing part of the twenty-four hours. The expression of the face becomes haggard and sallow. The tongue feels gritty, the palate parched, in spite of the restless activity of the salivary glands, which every now and then try to respond to the appeals of the distressed stomach. This stomach acidity betrays itself by many disagreeable symptoms: loss of appetite, however, marks a later stage of the malady. For years the infinite patience of Nature labours every night to undo the mischief of every day, and before noon the surfeited organs again report ready for duty. Habitual excess in eating and drinking sometimes begets an unnatural appetency that enables the glutton to indulge his *penchant* to the last, only with this difference, that the relish for special kinds of food has changed into a vague craving for *repletion*, just as the fondness for a special stimulant is apt to turn into a chronic poison-hunger. This craving after engorgement forms a distinctive symptom of *plethoric dyspepsia;* but even in the first stage of asthenic or nervous dyspepsia, the hankering after food is not hunger proper, but a nervous uneasiness suggesting the idea that a good meal would, somehow, supply the means of relief. The first full meal, however, entails penalties which the sufferer would gladly exchange for the less positive discomfort of the morning. Instinct fails to keep its promise, as a proof that Nature has been supplanted by a deceptive second nature. Headache, heartburn, eructations, humming in the ears, nausea, vertigo, and gastric spasms, make the after-dinner hour "the saddest of the sad twenty-four;" a dull mist of discontent broods over the whole afternoon, and yields only to tea and lamp-light. The patient begins to fret under the weight of his afflictions, but still declines to remove the cause. To out-door exercise he objects, not on general principles but on some special plea or other. He has to husband his strength. The raw March wind would turn his cough into a chronic catarrh. The warm weather would spoil his appetite, and aggravate his vertigo. The truth is, that of the large quantum of comestibles ingested, only a small modicum is *digested*, and that the system begins to weaken under the influence of indirect starvation. Business routine prevents the dyspeptic from changing his meal-times. He cannot reduce the number of his meals; people have to conform to the arrangements of their boarding-house. The stomach needs something strengthening between breakfast and supper. The truth is, that the exertions of the digestive organs alternate with occasional reactions, entailing a nervous depression which can be (temporarily) relieved by the stimulus of a fresh engorgement. Business reasons may really prevent a reduction of working hours, and domestic duties a change of climate or of occupation. The daily engorgement in the meanwhile goes on as before.

A Valuable Invention.—It is gratifying to learn that Mr. R. Adams, of 17, Blackman-street, London, S.E., whose fanlight-openers and silent door-springs are being extensively used, has received large orders for his Patent Reversible Window. The sashes, although they slide up and down in the usual way, can be instantly turned inside out, enabling anyone to clean each side of the glass with ease, while standing in the room.—[Advt.]

Hair Tonic.—Glycerine, 4 oz.; alcohol, 2 oz.; water of ammonia, 2 oz.; tinct. of cantharides, 2 drms.; rose-water, 4 oz; water, 4 oz; grain musk, 1 gr. Mix. When using this preparation no other dressing or pomade should be used.—*Boston Journal of Chemistry.*

Edible birds' nests, which are so highly esteemed by the Chinese, both as a food and for their supposed medicinal value, are described in a recent report from Borneo as being found principally in the water-worn limestone and sandstone caves that exist in considerable numbers all over the district of Brunú. They are the production of the Indian swallow (*Hirundo esculenta*), and are said by Europeans to have no more nutritive or medicinal value than so much wholesome isinglass, which substance they strongly resemble in every way. Many very absurd theories have been mooted as to the way in which the substance forming the nest is procured by the bird. The writer of the report says he is strongly inclined to believe that it is formed from the saliva of the bird—an opinion founded chiefly on the fact that the saliva-producing glands are during the nesting season always immensely enlarged, and evidently in very unusual functional activity. When it is remembered that a viscid secretion is usually found covering the inside of the mouth and the throat of birds living, as the swallow does, on small insects, caught while on the wing, and that the nature of their food is peculiarly fitted to supply the substance of which the nest is chemically composed, and that the nest, though strong, is very small, thin, and light, such a theory is more credible than one would at first suppose.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

ECONOMICAL BREAKFASTS, DINNERS, AND SUPPERS.

By Mrs. Thwaites, of Liverpool.

THIRD PAPER.

Breakfasts.—After all that has been said about the preparation of porridge, it will only be necessary to mention that very good and wholesome porridge may be made with coarsely-ground wheat meal, from which only the roughest bran has been removed. Thorough boiling is important; and, as it thickens fast when cooking, care must be taken to have it only moderately thick.

A word or two about the best methods of preparing stewed fruit. Any ordinary fresh English fruit may be prepared as follows:—Carefully pick and put into a perfectly clean saucepan. A china-lined one is best, there can then be no danger of the chemical action of the fruit acid on a metal, spoiling either the colour, taste, or wholesomeness of the dish. To a quart of fruit allow a ¼ pint of cold water; cover the pan, and simmer very slowly until soft; add enough sugar to make it pleasantly sweet; boil for three minutes after the addition of the sugar. It must be remembered that sugar is a useful article of food, and its use should not be stinted to those who like it. The heat-giving property is not equal to that of fat; but children especially can often take sugar when they cannot eat fat. People preferring the acid freshness of fruit must use only a small quantity of sugar. For preparing dried fruit, as apple chips, figs, prunes, &c., soak ½ lb. of apple chips for twelve hours by pouring a pint of absolutely boiling water over and covering them quite close, they absorb all the water, and closely resemble in appearance fresh apples sliced. Stew them slowly with the pan covered, and just enough water to prevent burning; when quite soft (the time will vary considerably) add two to three tablespoonfuls of sugar, grated lemon or orange rind or nutmeg may be used to flavour slightly. Figs or prunes should be well washed in warm water, stewed as above, and sweetened to taste. Young people have generally a natural liking for either cooked or raw fruit, which, for health's sake, ought to be encouraged as far as possible. Uncooked fruit, when quite ripe and sound, eaten with bread and butter, makes a wholesome meal, with which milk, or milk and water, would form the most suitable beverage. The price of good, sound fruit, fit to be eaten in its raw state, places it beyond the reach of many people, except as an occasional luxury. Quantities of fruit, however, quite unfit for food in its raw state, will be perfectly good when stewed and sweetened. Were more fruit eaten as actual food, and not as it too often is, between meals, the need for aperient medicines would be almost entirely done away with, and consequent frequent injury to the general health avoided.

The chief constituents of fruit are water, sugar, acids, and minerals. The very small quantity of nitrogenous or flesh-forming matter being hardly appreciable. It is to the acids and minerals that fruit owes its chief value. When taken in connection with farinaceous substances, a valuable and inexpensive diet is obtained.

Dinner.—*Potato Soup.*—1 lb. of peeled and sliced potatoes; put them into a pan with two onions and a stalk of celery cut up, 1 teaspoonful of salt, a ¼ teaspoonful of pepper, and a tiny bit of mace, add a quart of cold water; bring slowly up to boiling, and then add 1 oz. of fine sago and the same quantity of butter; boil slowly three-quarters of an hour, rub through a sieve, and add as much milk as may be necessary to bring it to the desired consistency, put in a teaspoonful of chopped parsley and heat.

Haricot Beans.—Wash and pick ½ lb. of beans; soak in cold soft water for at least twelve hours; put them on to boil in plenty of cold water. Salt must never be put in the water in which these beans are cooked; it hardens the albumenous matter they contain. Half a cupful of cold water should be added occasionally; this will prevent the outside of the bean breaking while the inside is still hard; two to three hours must be allowed for boiling; when quite soft, strain away the water. There are a great many ways of dressing the beans from this stage. The simplest is as follows:—Put the beans back into the pan; add a good teaspoonful of salt, and one of parsley, a quarter teaspoonful of pepper, an ounce of butter, and the juice of half a lemon; shake and mix well; serve hot.

An excellent salad may be made with cold haricot beans and sliced tomatoes, salt, pepper, vinegar, and olive oil. Haricots are rich in both carbonaceous and nitrogenous matter. Their percentage of the latter is higher than in lean meat; unless, however, they are properly cooked this nutritive matter is unavailable, being hard and indigestible. It is also necessary that they should be presented at table in as tempting and palatable a form as possible, always assuming that not only condiments, but a certain quantity of fat are required. Their use should be encouraged amongst the working classes; and, although it is not likely that they will be, to any extent, substituted for meat, it is very certain that they will always make a little meat go further than it otherwise would do; besides, the dryness of these beans adapts them for cooking with salt pork or bacon, favourite articles of food with the working classes.

Braized Beef.—A piece of 2 lb. to 3 lb. may be chosen from the coarser parts of the animal for this dish. Put the meat, which should be lean, into a bowl and pour over it two tablespoonfuls of vinegar, and the same quantity salad-oil, let the meat remain in this three hours, turning it frequently so that all parts may be touched with the oil and vinegar. Prepare and cut up two carrots, two onions, one turnip, one stalk of celery, and any other vegetables that may be at hand, put them at the bottom of a saucepan that will just hold the meat; add one bay-leaf, a small bunch of sweet herbs, six cloves, and about eight peppercorns, bind up the meat and put it into the pan, lay a slice of fat bacon over it, fill the pan with cold water or stock so that it comes to about half-an-inch from the top of the meat, butter a piece of kitchen paper and put it, buttered side down, over the meat so that the steam will be kept in, cover the pan and set it over a very gentle heat. When boiling point (212° F.) has been reached, draw aside and endeavour to keep at about 170° F.; 3 lb. of meat should simmer thus for two and a-half to three hours. The meat should be placed on a dish, the

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

vegetables round. The gravy must be skimmed and strained and then thickened with a tablespoonful of flour mixed with a very little cold water; it should be boiled up and seasoned to taste with salt, pepper, and a tablespoonful of sauce, pour round the meat. The goodness and economy of this dish, depend upon its being *slowly* simmered the whole time.

Supper.—*Stewed Tripe.*—2 lb. of tripe cut into pieces, 1½ in. square; put into a pan and cover with cold water, bring up to boiling, throw away the water, add just as much milk as will cover the tripe, simmer slowly for one hour. In a separate saucepan boil five or six medium-sized onions until they are quite soft; strain and chop them. Mix a tablespoonful of flour smoothly with a little cold milk, add this to the tripe, then the chopped onion and salt and pepper to taste. Allow it to boil up. Serve hot. Mustard is an improvement.

Tripe, with a very good show of reason, is a favourite supper dish. It is not so nutritious as meat, but as it is digested in about one hour, it does not interfere with rest and sleep; it would not, however, form a satisfying meal for midday. Doctors frequently recommend tripe as food for invalids. Carefully cooked, it is extremely suitable for them; its greatest drawback is its want of any decided flavour of its own. It, however, readily takes other flavouring. The fat found on one side of tripe may be retained altogether or partially for a supper dish, but should be removed for an invalid. It is well to state that in towns tripe is bought from people whose business it is to prepare it. As we see it sold by them, it has been cleaned and boiled for several hours, and has had the grease carefully skimmed off. The one hour's boiling mentioned above is after and apart from the long boiling.

A FEMALE TEACHER'S STATEMENT OF HER WORK, AND ITS EFFECTS.

The *Lancet* publishes the following statement of the experience of a pupil teacher, which will be read with interest at the present juncture :—

"Having been a student and teacher in public schools for the last ten years (from 1874 to 1878 as a pupil teacher, 1879 to 1880 as a student at college, and from that date to the latter end of 1883 as an assistant), I may state that my health has quite broken down in the work, indeed so much so that it is with deep regret I have been compelled to give up all idea of again following my profession. The reason of my impaired health has, I am assured upon first-class medical authority in London, arisen almost entirely from too great a strain of work, and I will here give a brief detail of the labours that fell to my lot as pupil teacher. At the age of fourteen I entered my apprenticeship and served a period of five years. During the summer months I had to be at the school at 7.30 in the morning, (which necessitated my rising at 6 o'clock) to receive an hour's instruction from the head mistress, the amount of instruction each week amounting to six hours. During the winter months this time was altered to two hours on three evenings in each week. Each day from 9 to 12 a.m. and from 2 to 4 30 p.m. was spent in actual teaching, the number of pupils taught in the various classes averaging from 50 to 60. At the end of each year an examination was held to test the ability of the teacher in specified subjects. In order to pass this examination successfully careful study was required, which study had necessarily to be accomplished out of school hours. I may safely say that I never left school at the close of the day without feeling worn out in body and mind, and quite unfit for the evening work, which had to be accomplished, if I wished to pass the examination creditably and fit myself for the retaining of my appointment. Actual teaching per day averaged five hours and a half. Tuition and private study three to four hours per day (this compulsory five days a week). On Saturday, although nominally free, two or three hours were devoted to study. Week-day meals, in summer: Breakfast, before 7.30; dinner, between 12.30 and 1.45. Daily exercise: Walk to and from school."

GIRL GYMNASTS.

[Dr. Frances Hoggan writes to the *Standard* strongly advocating gymnastics for girls.]

Let the ladies learn gymnastics, if they please, as well as men,
Alternating feats athletic with the pencil and the pen;
They'll improve too pale complexions, and their eyes will shine as stars,
After practice on the ladders and the horizontal bars.

Rounded shoulders, slouching gait, and also haply crooked spines,
By gymnastic exercises shall grow straight as mountain pines;
Let the girls then learn athletics who in town are apt to droop,
Careful drill will make them upright and eradicate the stoop.

We should educate the muscles as we ever try to train,
By severe examinations, many a weary little brain;
We'll improve the dainty *deltoid* and the *flexors* of the arm,
While the shapely *gastrocnemii* shall obtain an added charm.

Muscular shall be our children as the heroines of Reade,
And like Scott's moss-trooper hero, they shall all be "good at need;"
Having taken boxing-lessons, ill-used wives will turn like worms,
While the brutish British husband pusillanimously "squirms."

Punch.

The association of sugar and fat is not founded upon their combination in "toffee," but upon their allied composition. Both are hydro-carbons, destitute of nitrogen, and in some modern, but practically obsolete books upon food, would have been classed very low as foods. In reality their food value is very high.

As regards the free use of water under some conditions of the digestive organs, it may be said that no agent can prove safer or more salutary. Those who have morbid conditions of the stomach and bowels, which do not so far impair the general vigour as to prevent attention being given to the ordinary duties of life, can often use large draughts of water, especially in the morning, with manifest advantage. Obstinate constipation is thereby removed, the normal peristaltic motions of the bowels are restored, and the secretions may be vastly improved. We notice the salutary influence of water-drinking upon many of those who resort to the so-called mineral springs which abound in the country. It is not necessary that these springs should hold abnormal quantities of salts of any kind in order to effect cures; it is only necessary that the water should be pure. Spring waters that are charged heavily with saline ingredients, like some of those at Saratoga, are positively injurious to nearly or quite all that use them freely.

Scott's Midlothian Oat-Flour.—Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HOUSE-HEATING APPLIANCES.

By Professor Trowbridge.

FOURTH PAPER.

Two modes of heating are in vogue by which the demands of economy and comfort are then met, viz., the hot-air furnace and the steam-heating apparatus. The hot-air furnace is simply an encased stove outside of, and away from, the apartments to be heated, generally in the cellar or basement of a building. The casing or chamber within which the stove is placed is put in communication with the external air by an inlet conduit, which serves the double purpose of furnishing air for combustion and for supplying a number of rooms with heated air. To effect this twofold purpose there is a chimney direct from the stove for the removal of the gases of combustion, and one or more flues leading from the air-chamber around the stove, with branches for the different apartments, for that portion of the air which comes in contact with the heated surfaces of the stove and casing, and which then passes to the rooms. The air is usually heated to a temperature of 250 to 400 degrees, and by mixture with cold air may be brought down to 150 to 200 degrees, at which temperature it will enter the rooms. Air at these high temperatures must be further reduced in temperature and mingled with cold air in the rooms to be warmed, and for effecting this object reliance is generally placed on the accidental leakage at doors and windows. The expulsion of the heated air is accomplished by a spontaneous draft through flues from the heated apartments to the roof, or into the halls and thence to upper stories.

A single furnace may thus heat very economically an ordinary dwelling; but the disadvantages and defects of the system are numerous. Beyond a certain limited distance from the furnace the difficulty of conveying heated currents in this manner increases very rapidly; and where there are branch ducts leading to many rooms, one branch may overpower another, causing excessive heat in one room and a deficiency in another. The proper ventilation of apartments is difficult, and the highly heated currents, having an increased capacity for moisture, are apt to convert the rooms to be heated into drying chambers, to an extent that is neither agreeable nor healthful. A few open fires, arranged to produce proper ventilation, mitigate very much some of these evils. For large buildings several hot air furnaces must be provided, and the economy is proportionally diminished.

All of the above-described methods have been supplanted to some extent, in this country at least, by steam-heating apparatus, or its practical equivalent in limited circuits, the hot-water apparatus. Even for ordinary dwellings this system is being gradually extended, while for large blocks, such as apartment houses, hotels, manufacturing establishments, school-houses, and other large structures, the system is so greatly in demand as to have given rise to new and extensive industries devoted to the manufacture and instalment of the necessary apparatus.

Steam-heating is characterised by the fact that the heat is generated in the furnace of a boiler either within or without the walls of the building to be heated, the heat of combustion being transferred to water, which, when vaporised, constitutes the medium by which the heat is conveyed in comparatively small pipes to the point where it is utilised for heating purposes. Two distinct methods of utilising this heat are practised. In one the steam pipes are carried, by the most convenient course, directly into the room or space to be heated, where, by convolutions of the pipes, or what are known as radiators, an extended heating surface is furnished to the room. These coils, or radiators, give off heat both by radiation and by contact with the air, which is kept slowly circulating, as in the case of a close stove; and it is evident that only a feeble, or at least uncertain, ventilation is possible, except through special arrangements made for introducing fresh air. These heated coils are, in effect, identical with close stoves, the only difference being that the surfaces of the coils can never be heated to a degree higher than that of the steam,—practically, never higher than 310° nor lower than 215° or 220° Fahr., while the surface of the close stove may, under some circumstances, approach 950°. Active and sufficient ventilation may be attained with these coils, however, if they are placed in such a way that cool air, introduced through openings—as, for example, under windows—will mingle directly with the heated air rising from the radiators, and then be deflected upward to be mixed with the general circulation, and discharged through ventilating flues. Of course, such active ventilation can only be obtained at the expense of additional heat.

Frosting glass may be produced by applying a solution of sulphate of magnesia in beer with a little dextrine added.

Pleasant Drinks.—Cut up a pound of apples into quarters, add half a pound of sugar, and then pour over them half a gallon of boiling water. Let it get cold, and then pulp the apples. Pour the fluid over the pulp, let it stand an hour, and then strain. This forms an agreeable drink, the acid of the apple blending with the sweet of the sugar pleasantly, so as to be grateful to a parched palate. Two ounces of tamarinds boiled in a quart of water for an hour, then left to cool and strain, also forms a pleasant drink.

National Health Society.—The eleventh annual report of the National Health Society, which was recently read at the society's rooms, 44, Berners-street (Dr. Robert Farquharson, M.P., in the chair), shows that the society has carried on its work during the past year in a most practical manner. Hundreds of lectures on sanitary subjects have been delivered, not only all over the poorer parts of London, but in provincial towns, to large audiences of working men and women, classes of girls, district visitors, and others engaged in work amongst the poor. The society is much encouraged by the practical results of their lectures on "Keeping the House Healthy," "Rearing of Infants," "Prevention of the Spread of Infectious Diseases," "Preparation of Food," and kindred subjects, a knowledge of which is so much needed in our densely-crowded neighbourhoods. The question of poisonous dyes in domestic fabrics, of dust collecting, of smoke abatement, and the prevention of cholera, have been investigated and reported upon by special committees appointed for the purpose. The Metropolitan Public Gardens and Playgrounds Association, which is in connection with the National Health Society, has been most active in assisting to open spaces for recreation in crowded parts of London, also in placing seats and planting trees in convenient situations. The Health Exhibition held by the society last June was commented upon, and the secretary stated that more than 100 members had joined the society during the year.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOME WINTER RESORTS.

Southern and Swiss Health-Resorts. By Dr. Marcet. (London: J. & A. Churchill.)

I.

To the invalid about to proceed South for the benefit of his health, either it may be to avoid our chilly winter with its miserable fogs and variable, ever-changing climate, or, later still, to escape the treacherous east winds that infect the spring, the choice of a suitable locality is often no easy matter. He has, in the first place, a wide field of selection. Nice, Cannes, Mentone, San Remo, Pau, Algiers, Palermo, and the numerous other health-resorts to which the delicate are accustomed at certain seasons of the year to fly for refuge, have all their special advantages, and, in some cases, their characteristics so closely assimilate each other as to be almost indistinguishable. Then, again, he is influenced by other considerations. He desires company, cheerful society is as essential to him in its way as a healthy climate. He would like to go to a place where he knows some one, or if this be impossible, perhaps never having been on the Continent before, he must have a companion, and if so, whom? This is a most important matter. It is a truism to say that you never know people thoroughly until you come to be perpetually with them, and are dependent to a considerable extent on their tastes and manners for your comfort; and it is a truism that many people when travelling have found out to their cost. It is not surprising, therefore, if the invalid, under these difficulties—the difficulty, in the first instance, of deciding where to go, and afterwards whom to go with, to say nothing of minor embarrassments—should hesitate about going at all, should plaintively ask his physician, as he very frequently does, whether one of the home watering-places—say Bournemouth, Torquay, or Southport—would not suit his requirements equally as well.

We have been lead to these reflections principally through the perusal of the very interesting book on "Southern and Swiss Health-Resorts," by Dr. Marcet, formerly senior assistant physician to the Westminster Hospital, to whom we are indebted for many of the facts embodied in this and the succeeding paper. Pleasantly written, with much varied information, carefully eschewing on the one hand the dry monotony of the guide-book, yet always bearing in mind the main object in view, to furnish useful knowledge, Dr. Marcet's work is indeed extremely pleasant reading; and to the traveller going abroad, either for health or recreation, we can cordially recommend it for the general information that it contains. If there be a fault about the book—and of course there is—it is that the writer is, perhaps, too much inclined to linger by the way, to expatiate at undue length on what are comparatively unimportant matters, thus giving an appearance of unevenness to his book; but this, after all, is a minor shortcoming which we are gladly disposed to lose sight of in the general excellence of the work.

Of all the health-resorts of the south familiar to English people, Cannes, thanks—in a measure—to the number of distinguished men who have visited it, is probably, next to Nice, the best known. And, indeed, life at this popular French watering-place, quite apart from the inducement that it holds out to the invalid in the way of climate, is extremely pleasant work. It may not possess the bustle and gaiety of Nice, which is a much larger town, having some sixty thousand inhabitants, and boasting of horse races, pigeon-shooting matches (burly form of Mr. Anderson defend us!), theatres, roulette-tables, and what not beside, including a real live Carnival, but in its way it is every bit as enjoyable. One can dawdle away one's existence at Cannes. The days pass by you in no hot, precipitate fashion, flushing you with nervous excitement; but slowly and sedately, allowing you full time to sip their flavour, without in the slightest degree growing monotonous. And it must not be supposed that because Cannes is lacking in the more riotous festivity that distinguishes Nice, she has therefore no amusements at all. That would be a great mistake. There are many social enjoyments to be participated in; balls, concerts, private theatricals, lawn tennis parties, picnics, and other entertainments innumerable; quiet affairs for the blazé man of the world no doubt, yet to the individual who has no desire to go through life at a break-neck speed, but prefers to loiter by the way and take his pleasures, as the French have it, sadly, attractive enough. Or if the visitor be a sportman, fond of out-door exercise, he can try his hand at fish spearing, a highly picturesque (for the people on the shore) form of amusement which is carried on at night by the light of a fire of burning bituminous pine wood and coal, suspended in a metal basket over the stern of the boat, while the fishermen, weapon in hand, stand in the bows and spear their unfortunate victims as they glide by. It is perhaps hardly necessary to point out that this is a pursuit which requires considerable dexterity in manipulation, for the inexperienced sportsman is just as likely as not, if he miss his aim, to fall over the side of the boat; hence to some people the pleasure of the occupation. But there are, so far as we are aware, no gambling tables. Such a thing would not be tolerated for a moment, certainly not. Let those misguided creatures over the way, the Nicits or Nicians (or whatever you are disposed to call them), keep such sources of abomination to themselves, and much good may they derive from the possession.

To the invalid, of course, the chief consideration at Cannes is the climate. The atmosphere is much drier than in England, and there are no fogs. Absolutely wet days, as Dr. Marcet points out, are exceedingly rare, and from a table which he has drawn up, giving the results of his observations on the Riviera during eight seasons (six of which he resided at Cannes and two at Nice, where the climate is almost identical), it would appear that, on an average, not more than four or five occur from November to April inclusively. Nothing could testify more forcibly to the fineness of the weather than this. The mean temperature at Cannes during the same period is about 9 deg. or 10 deg. higher than at Greenwich; and, writing on this point, it may not be uninteresting to note, as a somewhat remarkable fact, that Cannes, owing, no doubt, to its sheltered position from the northerly winds and the immediate neighbourhood of a warm sea, has, for the three coldest months of the year, a higher temperature, by 4·3 deg., 5·6 deg., and 2·1 deg. respectively, than Florence, Pau, and Pisa, towns which occupy very nearly the same latitude.

People wintering on the Riviera for the benefit of their health, as a rule do so to avoid the cold, damp, and fogs of other localities; they either suffer from some form of lung

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Daylight in Dark Rooms.—Chappuis' Patents. 69, Fleet-street.—[Advt.]

disorder already or, being constitutionally disposed that way, desire to avert an expected attack. The season for such may be said to extend from the middle of October to the end of April. Any time before or after this is likely to prove injurious on account of the heat. The principal complaints for which the climate is found beneficial are asthma, bronchitis, pneumonia, and consumption; but it is not every form of these affections that the air of Cannes is suitable for, and in the more advanced stages of phthisis, when a man's days are so to speak numbered, it should be remembered that a change to the south of France is of no use whatever, and the patient might just as well remain at home. The special form of bronchitis and asthma to which the air of Cannes is adapted is the chronic, where there are no accompanying symptoms of inflammation or fever, and the disease is apparently due to a low and weakened state of the constitution; for the more acute forms, attended by greater inflammatory disturbance, loss of sleep, and nervous irritability, Dr. Marcet would be inclined to recommend Hyères, Madeira, or the Canary Islands, and, in some cases, Pau. Chronic bronchitis of a comparatively mild type is, as a rule, soon relieved on the Riviera. The cases of consumption that derive the most benefit are either in an early stage, without inflammatory or febrile conditions, or in the third stage with wasted lungs, the patient in other respects being in a fair state of health.

To the man who is in search of recreation as well as pure atmosphere—and throughout these papers we have carefully kept this gentleman in view—Nice offers many inducements. It is, as we have pointed out, a far livelier place than Cannes, and it does not possess the air of sober respectability that characterises the latter place. Saints, if we may put it broadly, would perhaps go to Cannes, sinners to Nice. As for the climate it is very much the same in both towns, and from a medical aspect what holds good of the one is equally true of the other, so that there is nothing more to be said on this point; but, if anything, Nice is perhaps rather colder than Cannes in the winter. Its amusements are extremely varied, everybody doing his best to enjoy himself purely and simply, and amongst its visitors you will find men of all nationalities, Germans, Americans, Russians, Poles, Belgians, Greeks, and English, including some of the greatest blackguards under the sun, which does not say much for the purity and simplicity of their enjoyments after all.

Immediately the name of Nice is mentioned, the vision of a long table, covered with green cloth, rises before the eye. We see men of peculiarly impassive countenance dragging to their side of the board, by means of long rakes, piles of glittering gold pieces, whilst haggard-looking victims, with deep-seated frenzy stamped on every lineament of their faces, despairingly clasp their hands to their foreheads, and rush into the gardens outside to put big leaden bullets into themselves. It is very pretty, but not true. We are inclined to think that the evil effects of the gambling-tables at Monaco have been much exaggerated. No doubt some people have been ruined by them, as some people have been ruined by almost every amusement of a speculative nature that was ever invented, but nothing like so many as the novelist and the popular descriptive writer would have us believe. Not for a moment would we be supposed, as a journal devoted to the interests of domestic health, to stand up for public gambling-tables; but there is truth in all these things or there is not. At any rate—and this is our contention—we ourselves should never keep away from Nice on this account, because they happened to have public gaming tables in the vicinity, or horse-races on Sundays, and regattas; though, for our own part, we hardly take a "hand" at cards or visit a race-course once in twelve months; and on the only occasion we assisted at a regatta we fell overboard.

INTERNATIONAL HEALTH EXHIBITION.

The great interest manifested in the Exhibition is shown by the fact that application has been made, by British exhibitors alone, for space five times as great as that actually at the disposal of the Executive Council. On the 15th of this month the first goods were admitted.

Information has recently been received that the French Government has appointed a Commission; and Italy—owing in a great measure to the individual exertions of a member of the Executive Council—will, it is hoped, take an active part.

A portion of the Educational Section of the Exhibition will be located in the Central Institute of the City of London Technical Guilds, the handsome building in course of erection in the Exhibition-road, which has been kindly placed at the disposal of the Executive Council.

The Royal Albert Hall, with its musical attractions, will now form an integral part of the Exhibition; and the Aquarium, a popular feature of the late Fisheries Exhibition, will continue as an important part of the Health Exhibition.

In the Dress Section, the most popular exhibit will probably prove to be a series which is being prepared, illustrative of English dress of all ranks of life from the time of the Conquest to George IV.

While the main objects of the Exhibition—which are to impart instruction on the principal sections of the undertaking—have received the fullest attention from the Executive Council, the amusement of the visitors has not been overlooked. The Band of the Grenadier Guards, under the able conductorship of Mr. Dan Godfrey, will, as last year, perform each day; and, actuated by the success which attended the visit of the Thuringian Regimental Band to the Fisheries Exhibition, the Executive Council have taken such steps as may, it is hoped, lead to the visit of representative foreign military bands this summer. It is also intended that concerts shall from time to time be given in the Albert Hall.

An International Congress on Education will be held, and conferences and lectures will conduce to the elucidation of the subjects of the Exhibition. It is also proposed to have a Library and Reading-Room in connection with the Exhibition, which will be open to all visitors, under proper regulations, while the Exhibition is open. The library will consist of books on various subjects comprised in the classification of the Exhibition, both English and foreign. Application has been addressed to foreign and colonial Governments, asking them for copies of reports and statistics on sanitary and educational matters, and a circular is being sent out to authors and publishers requesting them to contribute works of a similar character.

The *Caterer* gives the following recipe for producing the veritable Worcester sauce:—White vinegar, 15 gallons; walnut and mushroom ketchup, 10 gallons; Madiera wine, 5 gallons; table salt, 25 lb.; Canton soy, 4 gallons; allspice and coriander (powdered), of each ½ lb.; mace and cinnamon, of each ½ lb.; assafœtida, ¼ lb.; dissolved in brandy 1 gallon. Boil 20 lb. of hog's liver for twelve hours with 10 gallons of water, frequently renewing the water. Chop up the liver, work with the water, strain, and mix with the other ingredients.

International Health Exhibition.

LONDON, 1884.

FIFTH PAPER.

MEMORANDA FOR THE GUIDANCE OF EXHIBITORS,*

Drawn up by the Sub-Committees and approved by the Executive Council.

Food.

The official classification of Group 1 of the Exhibition, in which are comprised Classes 1 to 12, will be found on p. 11.

In the first three classes are included what may be termed the Raw Materials of Food. In Class 1, specimens of the actual foods themselves may, when possible, be exhibited, and when this cannot be done, they should be represented by models. The exhibition, for instance, of uncooked meat would be neither desirable nor practicable, but any exhibits tending to give information as to the various animals used for the food of man, their nature, habits, characteristics, &c., will be welcomed. In the case of cereals and other food-stuffs, the raw grain and the products from it may be exhibited. Fruits and vegetables will for the most part be represented by models, but the Executive Council are also considering the establishment of periodical shows at which the articles themselves can be exhibited and sold. Specimens of foreign fruits, &c., will be gladly received for this purpose. Models of the different fruits imported in a dried or preserved state into this country are specially desirable, in order to illustrate their natural forms.

The classification sufficiently indicates the class of exhibits desired for Classes 2 and 3. It may be added that, where possible, preserved provisions should be put up in bottles, so that they may be visible, not in tins. Not more than three specimens of each kind should be sent in.

In Class 4 are to be included every sort of drink, including milk, as well as those enumerated in the classification. It will take in all exhibits connected with the production of tea, coffee, and other beverages (except those relegated to Class 12), and all illustrating new or little-known beverages, such as Maté or Paraguay tea, Coca, Koumiss, &c.

The exhibits in Class 5 will naturally also be capable of being placed in one or other of the previous classes, but this arrangement has been adopted with the view of giving prominence to any novelties. Food for children and invalids will form a special feature in this class.

As regards Class 6, the Committee think it well to draw attention to the announcement already made by the Executive Council, that, as refreshments come within the scope of the Exhibition, all methods of preparing the same, whether by cookery or otherwise, and the display and sale thereof, will be matters of separate arrangement with those wishing to be represented in this section.

One principal object to be kept in view in this department of the Exhibition will be the diffusion of information as to the economical cooking of food, and the best way of utilising the various kinds of food available to this country. Cheap cooking, both at home and by means of public kitchens, should be amply illustrated. For the purposes of comparison there should be illustrations of every class of foreign cookery, not only of the luxurious sort, but of that practised in the homes of the well-to-do, of the middle-class, and of the poorer classes, in foreign countries. As a matter of interest, and with the object of diffusing information on the manner of life of nations differing yet further from ourselves, the Committee hope that means may be found for Exhibiting the practice of Eastern cooks, Chinese, Japanese, Indian (Mohammedan and Hindoo), &c. Bakeries will be included in this class, and the Committee hope that the fittings and appliances of the most modern establishments (both English and foreign) may be fully shown.

The object of Classes 7 and 8 is to diffuse popular information as to the nature, constituents, uses, and adulterations of food. Exhibits illustrating these and similar points will be welcome. The Committee trust that the Science and Art Department will assist this portion of the Exhibition by lending and supplementing one of the collections formed by Professor Church.

As regards the last item in Class 8, it should be noted that parasites or other organisms injurious in any way to food or its sources are included.

As regards Foreign Dietaries in Class 9, the Committee consider that this expression must be taken in its widest sense, and as including the food of savage races all over the world. It would therefore comprise specimens of the animal and vegetable substances used as food, beverages, stimulants, &c., by savages or native races of low civilisation, both in the raw and prepared condition, together with appliances and utensils of all kinds used in their manufacture or consumption. Models and drawings illustrative of the subject would also be desirable. As examples may be mentioned sago, and its native manufacture, by Malays, natives of New Guinea, &c.; cassava, and its manufacture in British Guinea; taro, the Polynesian food, and the manufacture of roi from it; kaava and kaava bowls of Fiji and elsewhere. The Committee hope that the materials for a valuable ethnological collection of this sort will be forthcoming from private owners in England.

The exhibits admissible to Class 10 are clearly indicated in the classification.

Classes 11 and 12 are added as separate classes because it is necessary that all machinery should be placed together in one gallery where the motive-power is provided. Among the processes which the Committee hope to see illustrated may be mentioned methods of cold storage and transport of fresh meat, ice-making, dairy operations, the preservation of food, making bread, biscuits, &c., the manufacture of confectionery, of condiments, of cocoa and chocolate, and the production and bottling of aërated waters.

* Communications relating to the following memoranda should be addressed to "The Secretary, International Health Exhibition, South Kensington, London," and marked on the envelope for the Sub-committee to which it refers.

Sanitary Appliances, Etc.

CHLORALUM.

We have received samples of this well-known disinfectant, and have pleasure in directing the attention of our readers to its efficacy. Experiment has proved that chloralum is a powerful disinfectant, possessing no smell, and likewise the additional and immense advantages of being cheap and non-poisonous. Scientific opinion has pronounced that chloralum is most effective in removing and destroying disagreeable odours and effluvia at large. It is not volatile, and therefore does not disinfect the air; but as an application for the disinfection of clothing and rooms by washing, chloralum has few rivals. The various preparations of chloralum are well adapted for all purposes where disinfectants are likely to prove useful. The liquid itself possesses, in addition to its disinfectant uses, valuable properties as a lotion, and may be used with success as an application to wounds, sores, and as a corrective to discharges of all kinds. In the form of powder, chloralum can be used as an application to drains and in closets. The chloralum tooth-powder is astringent, and has a healthful action on the gums, while the chloralum wools form useful applications in surgical dressing. We have also pleasure in noting chloraline, which as a liniment has valuable properties, and may be applied with success to the cure of chilblains and like conditions.

Agreeable Disinfectant for Rooms.—The following, quoted in *Phil. Med. Rep.*, from an Italian Journal, is recommended as a pleasant and efficacious disinfectant for sick rooms:—Camphor, 20 parts; hypochlorite of lime, 50 parts; alcohol, 50 parts; water, 50 parts; oil of cloves, 1 part; oil of eucalyptus, 1 part. The ingredients should be mixed slowly in a cool, spacious vessel, and a few drops on a plate placed in the rooms.

New Form of Artificial Milk.—It is stated that a new preparation of artificial human milk is to be brought shortly before the public. The ingredients of which it will be composed are set down as follows:—Fresh cow's milk, 1 pint; skimmed milk, ½ pint; hot water, ½ pint; sugar of milk, 1 ounce. The sugar of milk is dissolved in the hot water, and the solution mixed with the other ingredients. It is asserted that this is the nearest approach to human milk attainable; and, according to Dr. Davies, the addition to the above quantities of ten grains of carbonate of soda would prevent it turning sour, and render it more digestible. If obliged to be dry-nursed, an infant, it is said, would thrive on this milk for the first seven or eight months of its existence. It is this compound artificial milk that it is proposed to manufacture in a condensed form for the use of the public.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

[Important to Correspondents.—We have again to call attention to the fact that, while every effort is made week by week to deal with the enormous mass of correspondence which reaches us, we cannot undertake to answer queries save as space permits. All queries are attentively considered and replied to, but in no case can any query be answered in the same week as that in which it is received.]

[A number of replies have been crowded out of the present number owing to pressure in space. These replies will be duly given next week.]

GENERAL.

Oxon.—There is no difference, we believe, between the two plans.

A. Bailley.—All in good time. We intend to have articles on the influence of railway travelling on health. The *Lancet*, some years ago, issued a special series of articles on this subject.

Canton, J.—We believe the percentage is about twenty.

Anthony.—The rate at which nerve force travels is much slower in cold-blooded than in warm-blooded animals.

Tempus.—The broad-headed tape-worm to which your refer is probably derived from fishes. It is not met with in inhabitants of this country.

J. Aitken.—The microscope cannot at present distinguish between the red blood globules of man and those of our common domestic animals.

G. Thomas.—Dr. G. Wilson's "Handbook of Sanitary Science,' or "Manual of Hygiene," published by Messrs. Churchill, London, is the book you require. Corfield's "Laws of Health," 1s. 6d. (Longmans), is also a capital little book.

Bangor.—Cassell's "Family Physician" contains all the information you seek. Write to Messrs. Cassell for a catalogue.

Nom de Guerre.—Appears to mean "alum and borax ten grains," or "borax of alum ten grains." Your letter does not make clear which."

G. E. N.—Apply to Messrs. Bostel, 23, Charing-cross, and see Mr. Bostel. Explain your views to him, and probably he may take up your invention. You want a manufacturer who will push your invention, if we understand you aright.

F. H. Williams.—Read the chapter on "Rudimentary Organs" in Darwin's "Origin of Species." See chapter on same subject in Dr. Andrew Wilson's "Chapters on Evolution (Chatto & Windus); and read an article by Dr. Wilson on "Human Resemblances to Lower Life" in *Longman's Magazine* for last year. Mr. Darwin has also interesting details on rudimentary parts in man in his "Descent of Man." Glad to be of any further assistance.

Alchemist.—The following is a formula for a "Fruit or Food Salt" likely to suit you :—2 oz. each of carbonate of soda, tartaric acid, Epsom salts, and cream of tartar; ¼ lb. pulverised sugar. Mix well, and keep in a tight-stoppered bottle. It is aperient, and cooling in its action.

SANITARY.

Gasometer.—The fumes of which you complain are held to be injurious to health. How near is your house to the road or place of deposit? Do you experience inconvenience in your house from the fumes? If not, your only remedy would be indictment for a public nuisance. Everything depends upon the amount of inconvenience you experience. How long has the practice been in existence?

Ormond.—The date of the Canal-Boats Act is 1877.

Aqua.—Any dealer in sanitary apparatus could provide you with a cistern waste-preventer. Those for closets should hold about two gallons each.

Sola.—The presence of the minute crustaceans, commonly known as water-fleas, is incompatible with the purity of water.

Abel G.—Milk is highly susceptible of absorbing gases and other matters. It should never be stored in lead or zinc vessels.

G. May.—Thanks for your letter and specimen. What you describe is simply disgraceful. We shall note what you say for future use.

MEDICAL.

G. T. B.—We should recommend you to live for a time on milk, soups, and other nourishing fluids, so as to give your stomach complete rest. It appears to us that you are highly nervous. For piles use the following :—*Tincture of Hamamelis*, a teaspoonful added to an eight-ounce bottle of water. Take two teaspoonfuls every three hours. As a lotion for external application, two teaspoonfuls of the tincture should be added to a half-pint of water and applied several times daily on lint.

A. T.—Spinal irritation is a general term including a variety of ailments. You must specify more particularly your symptoms. Stimulants should not be taken in such cases.

Bob.—*Fer Bravais* is a blood tonic. Any druggist will inform you of its price.

Nimrod.—See advice to "G. T. B." in present number. You would find immense benefit by trying the experiment of a vegetable dietary, instead of tampering with aperients. Constipation is the most frequent cause of your ailment. Glad to be of any further service.

J. O. T.—You suffer from a form of skin irritation, possibly caused by chill and digestive complaints. See to your general health and take more open-air exercise, and try the following :—Sulphide of lime, 24 gr.; sugar of milk, ½ oz. Mix. Keep in a stoppered bottle. As much as will cover a sixpence to be taken every four hours. The face might be smeared with pure Vaseline at night.

A Housekeeper Twenty-four Years.—In the case of poisoning by red lead, to which you refer, the illness did not arise from the people drinking the water from the kitchen boiler, but from using the water for cooking purposes. Nothing was said in the paragraph about the water being used for drinking.

Bull's-eye.—You say nothing about your work, but from your letter we suspect you are over-worked. Your remedy is rest, together with a little tonic medicine, such as *Fer Bravais*, 15 drops, thrice daily, in water. You had better leave off smoking for a time.

M. Hawford.—What you complain of consists of an affection of the little openings of the glands of the skin. Wash carefully with tepid water and Pears' soap. Try a vegetable dietary and the lime powders prescribed to "J. O. T." in present number. Your skin troubles are probably due to some slight derangement of your general health, and your letter shows us as much. If not cured, write again.

Daisy.—Asthma is an ailment which depends very materially on the state of the general health. Your food should be very light and, in addition, you might take with it some Morson's "Pepsine." When you are troubled with an asthmatic attack, the following may be useful :—Tincture of lobelia, two drachms; spirits of chloroform, three drachms; tincture of conium, three drachms; almond mixture to make up six ounces. A dessert-spoonful thrice daily. Probably a change of air might relieve your symptoms.

T. Taylor.—The ointment to which you refer is somewhat complex in its nature; we should advise you, instead, to use a lotion composed of one part Friar's Balsam and twenty parts rose water for the face.

Miss J.—In such a case as yours we think you would derive most benefit from a consultation with a physician, who would lay down a series of rules for diet likely to benefit you. Potatoes will do you no harm, but a physician, after an examination, would prescribe remedies likely to relieve your joint troubles.

Camp.—We do not know the composition of the restorer you name. Have you tried Rowlands' Macassar oil (the pink variety) as an application? Any restorer which will produce change of colour, is almost certain to contain lead.

Inkstand.—The secretion is merely one from what are called the sebaceous glands of the skin. Wash night and morning, and apply a little pure Vaseline. There is no disease.

Tricycle.—An article on tricycling by Dr. Richardson appeared in *Longman's Magazine*. Varicose veins may exist without any heart disease, but your best plan would be that of undergoing a thorough examination by a competent physician, who would advise you as to the necessity of wearing an elastic stocking. We do not think you should "tricycle" without obtaining in the first instance a medical opinion.

F. G. W.—As, in our opinion, your ailment depends on want of tone, take a teaspoonful of Fellows' "Syrup of the Hypophosphites," thrice daily, before meals, in a wineglassful of water. Let us hear how you are in a week or so after taking this tonic.

H. T. W.—No; do not continue tonics, so as to become dependent on them. You should try cod-liver oil and iron for a time—a dessert spoonful after every meal. Thomson's "Cod-liver Oil Cream" (see our advertising columns), in which there are contained substances likely to benefit you, should suit you. Let your food be nutritious.

G. H. F.—Try soaking the feet in a solution of alum and water. Paint the lumps with tincture of iodine, and rest as much as possible.

E. W.—Look to your teeth. (See advice to "Dens" in Health No. 48.) Try the effect of a vegetable dietary in part, and let your food be light, but nourishing. Take a little "Pepsine" with your meals as an aid to digestion; and you may also benefit from a little more open-air exercise. If not better, write again.

W. Smith.—Don't be alarmed. Use twice or thrice daily an injection of a little "Condy's Fluid" in tepid water—sufficient Condy simply to colour the water of a pale purple; and take also ten drops *Fer Bravais* in water thrice a day. Rest as much as possible. Give up all other medicines.

Inquirer.—Use the hair-lotion recommended to "Russell," in No. 48 Health. Your hair will grow again by attention thereto. Use a soft brush, and wash the head once a week with Pears' soap and tepid water.

T. W. H.—See and follow advice to "Dunedin," in No. 48 of Health. Persevere in this treatment and you will get quite well. Rest as much as possible.

Foxglove.—Regarding the mixture you were ordered, and the comparative infrequency of its use, we see no reason to think any "cumulative" effects can accrue. You have been needlessly alarmed. Our recommendation to you is simply rest, avoidance of exertion (sudden), and attention to general health. Many so-called "heart" troubles really arise from the stomach.

J. S. T.—Look to your teeth (follow advice given to "Dens," in Health, No. 48). See that your food is light and thoroughly digested. Give up tea and coffee, and don't eat late at night. Take a little "Æsculap" mineral water occasionally, as a mild aperient, in the morning. Write again if not cured. A charcoal biscuit or two may assist your cure.

Nemo.—Use a lotion consisting of bicarbonate of soda, one drachm, glycerine 1½ oz.

Rednaxela.—Don't be morbid. By your own account you suffer from no disease; but if you think you want toning, read and follow advice to "Dunedin," in Health No. 48.

S. E. R.—No cure for blushing. As a tonic for your general health try the pills recommended to "T. Y. C." in Health, No. 48. Rest as much as possible, and don't bicycle until you are thoroughly well. Try a mixture of glycerine and rose-water for scurf. For sprains, rest and hot fomentations, with cold water treatment after inflammation has subsided.

A Recommender of Health.—Eat nutritious food, take active exercise, and take cod-liver oil daily after food, during spring and winter. The cod-liver oil will relieve your other symptoms; and your druggist may add a little syrup of iodide of iron to the cod oil with advantage to you.

Anxious Mother.—We should give the children cod-liver oil after food regularly all spring; let them drink plenty of new milk, and food generally to be nutritious. Iron added to the oil (see answer to previous correspondent) would also do good. Should no improvement appear after this treatment, let the children be thoroughly examined by a medical man. No physical exercises are permissible till the children are thoroughly well. What is your family history and that of the father?

Franco.—Use a little carbolated Vaseline ointment as an outward application, and take internally the lime powders ordered to "J. O. T." in present number of Health. Write again if not bettered.

W. Collins.—You were replied to in No. 49. We cannot guarantee an early reply, owing to the mass of correspondence, which requires assortment.

Un Misérable.—Don't be morbid. Read and follow advice to "Dunedin" in Health, No. 48. You suffer from no disease, and will get quite well by attention to advice indicated.

Beta.—Yours is a hard case, but your ailment will not cease until you can make some change in your diet and life. You want more exercise and fresh air. We know what the food too often is, in such establishments. Why not seek a country situation? A little "Æsculap" mineral water taken occasionally in the mornings will act as a mild aperient. You are quite well as regards the so-called "debility," so don't let that prey on your mind.

H. B.—No doubt your mental worry is at the root of most, if not all, your troubles. Why not try milk, light nourishing soups, Brand's Beef Essence and like preparations for a time, and give your stomach rest from digesting solids? A little Pepsine taken with the food should do you good. You are evidently not a subject for ordinary tonics, and your treatment must be largely dietetic. Give our advice a trial (not so many Turkish Baths), and if not improved, write again.

Setay [or Setan, or Lebay, Leamington].—You signature is highly indistinct, and you have yourself to thank for overlooking your reply. You were replied to in No. 48 Health, under the name of "Lebay."

F. K.—Try the effect of pure Vaseline applied nightly (and thoroughly) to the inside and edges of the lids. Use a little of a lotion by day, consisting of six ounces rose water and six grains sulphate of zinc. Use lotion, say half wineglassful to same quantity of water. If not improved, write again.

Dyspeptic.—You suffer from confined hours and overwork also, probably. We would say to you, more fresh air and less close air (and gloomy fancies). You are nervous, and inclined to despond. Let your food be light and nutritious (see advice to "H. B." in present number, and follow same with regard to food). Glad to be of further service. The pills recommended to "T. Y. C.," in No. 48, should be of service to you. We can only send addresses of medical men on receipt of stamped addressed envelope. The bark you name is a simple remedy, but has no lasting effects.

Juvenis.—You complain of being too youthful! Most persons would like to have "half your complaint." If you think it a "misfortune" to look five years younger than you are, buy a grey wig, and wear spectacles. Why, and how, do you find your juvenile appearance "distressing" and "disadvantageous" to you?—and you only twenty-two years of age!

Eye.—Simply see that your child's health is attended to. Divert her from squinting by seeing that her hair in front does not get into her eyes, and by attention to the eyes generally. Later on, even if she does squint, a simple operation will remedy that. She is too young for any interference yet.

Alpha.—See that your truss fits you, and that it is properly made. For the other symptom of which you complain, wear a suspensory bandage, and bathe with cold water. A surgeon will advise as to truss, &c. Avoid violent exercise and strain.

Galatea.—Yes; all decayed teeth should be removed, and a good artificial set made. The "gas" is safe in the hands of a good dentist. Good digestion begins with good teeth. For thread-worms give the children the following powder (after a dose of castor-oil): santonin, two grains; scammony powder, three grains.

A Medical Student.—See our articles in past numbers of Health on "How to Get Thin or Fat," also an article on "How to Get Thin," in Health, No. 45. It is dangerous to trifle with unknown drugs. A course of diet is the best remedy. Some persons are constitutionally stout, and in such cases it may be impossible (and unwise) to effect violent reduction of body. Read Banting's pamphlet, to be had from Harrison, Pall-Mall, S.W.

Hyderabad.—1. No; the actions are quite different. The one is a tonic, the other a depressant. 2. No; nothing like that quantity. Try the tonic (Fellow's) in half-teaspoonful doses in water twice or thrice daily, and let us hear how you are after a short trial of this advice. Glad to be of any further service.

J. Arbuthnot.—We do not think there is any such danger as you may suppose. Persons have swallowed dozens of pins and needles, and have yet lived to old age. We should recommend giving a diet consisting of dough puddings, cheese, &c., and other binding matters for a short time. Such a course may be effectual in dislodging and carrying away the foreign body.

George.—You appear to be simply in want of a tonic. Try a teaspoonful of Fellow's "Syrup of the Hypophosphites," in a wineglassful of water, thrice daily, before meals, for a short time. Take more open-air exercise, and don't be morbid. No stimulants for a time, at least.

A. Waller.—If you were not replied to in Health No. 49, please restate your query. See announcement to correspondents at head of "Queries and Answers" in present number.

G. D. T.—By all means take the sea voyage. It will give you something to think about, brace you up, and cure your morbid fancies. There is nothing the matter with you. Use cold sponging, sleep on a hard mattress, and avoid fluids late at night. Take plenty of open-air exercise, and 15 drops *Fer Bravais*, thrice daily, in a little water.

Caxton.—See advice to "George," above.

Ignoramus.—See advice to "A. Spencer," in Health No. 48, as regards inhalation and iron tonic (10 drops tincture of iodine to pint of hot water at 150 deg. F.). Let your food be light and nourishing. If possible, try change of air.

Henry.—Arrange to dine when business is over. Take a light lunch. Rest after food—this is highly important—and take Morson's "Pepsine" for a time with your food.

[*Continued on page* 400.

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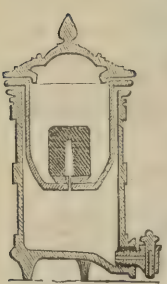

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 28, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

That the "fair girl graduates," or their representatives in our schools are, at last, to have an equal chance with boys of developing a healthy body as well as a cultured mind, seems to be a prospect of the near future, if not of the actual present. Mr. J. R. Mozley, Inspector of Poor-Law Schools, has lately borne testimony to the excellence attained by girls in physical exercises. This gentleman examined the moral and industrial training schools at Swinton, belonging to the Manchester Guardians. He found there about 200 children who had been carefully trained in swimming, and in the competitions which took place the girls excelled the boys in the aquatic sports. One girl swam 600 times round the bath, a distance equal to eight miles—certainly a very extraordinary distance for any young person to accomplish. The first boy only accomplished 504 times round the bath. At these schools also the girls are taught "wand" exercises (similar to those at present being described in Mr. Standage's papers in Health) and dumb-bell exercises are also performed to music.

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These facts indicate that an important educational advance is being effected in certain districts. It is most desirable that all schools should be provided with an "exercise room," properly fitted with appliances for ensuring, in a scientific and carefully-regulated fashion, the full development of bones and muscles. That inimitable philosopher, Dr. Pangloss, in "The Heir at Law," when informed by Lady Duberly that, in addition to walking out with the lap-dogs, the tutor of the family should teach dancing, is made to remark that "his business is with the head, not the heels, of his pupil." But, after all, the "heels" are really as important from a health point of view as the "head," seeing that only in a healthy body can the mind attain its fullest development. We shall grow wiser in time, no doubt, and imitate Sweden in her adoption of a system of gymnastic exercises, which, like that of Ling, shall be practised in every school, and shall be made a means of occupying, agreeably and usefully, part of the time allotted for play.

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There is one idea, however, which the public will require to understand a little better than at present, before the subject of physical exercises in schools can be fully encouraged by parents. The word "gymnastics," as commonly understood, is believed to refer to exercises more or less of acrobatic character. The moment this word is mentioned there rises before the mental vision of many persons a scene in which dangerous feats of strength, never witnessed outside the walls of a circus, form the chief item. There can be no greater mistake than to suppose that the "gymnastics" which physiology advises as suitable for the school bear any relationship either to violent exertion or to dangerous athletics. On the contrary, the exercises of the school are specially graduated to the ages of the pupils, are never excessive or violent in their nature, and are arranged so as gradually and consistently with natural growth to develope to the full the frames of the boys and girls who take part in them. When a parent declares that he won't allow his boy or girl to attend the school gymnastic class on account of any presumed roughness or violence, it is clear he does not comprehend what "physical exercise," in its true sense, means. A visit to any of the schools where such exercises form a part of the curriculum, would serve to dispel all false notions regarding this subject, and would show how weak chests, pigeon breasts, and stunted frames at large are made, by gentle exercises willingly undertaken, to develope into healthy bodies, which will stand the strain of life and existence when, as weakly subjects, they would have gone to the wall in the inevitable struggle which awaits the toilers and moilers of the earth.

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Cremation is decidedly "looking up." Dr. Sedgewick, the Medical Officer of Health for the City of London, declared at a recent meeting of the Court of Sewers, that cremation was the least objectionable method of disposing of the dead, since the process could be effected without nuisance or injury to health. It is intended to move for a Select Committee to consider and report whether it was not advisable that a proper "crematorium" or furnace should be erected at Ilford Cemetery, that the London public might adopt that method of "burial" if they wished. As a means for absolutely destroying disease-germs, for preventing water contamination, for removing nuisance from the very centres of towns, we repeat, cremation is unrivalled as a health measure.

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More news about the cholera-bacillus, or germ. The cholera-germs, or, at least, the living particles which are found associated with that disease, are described as unlike other bacilli. They are not quite straight, or rod-like, but slightly curved, and resemble the "comma" of punctuation in shape. Hence, this bacillus will, in all likelihood, be familiarly known as the "comma-bacillus." These germs exhibit lively movements. When sown in nutritive gelatine, they form regular colonies in that substance. Their curvature may be so marked as almost to present a semicircular form. These germs were found in the discharges of cholera-patients, and have not been met with in any other disease. They were not found to occur in dirty water taken from various sources. Dr. Koch, whose sixth report (dated from Calcutta, Feb. 2), gives these particulars, argues very forcibly that these germs are the *cause* of the disease. The growth of this bacillus, he maintains, can only be favoured by the cholera process, or it is the actual cause of the disease, which is only induced when the living germ is conveyed into the intestine of man. If the first supposition were correct, Dr. Koch contends, we should find the germs always resident in the intestine awaiting only the cholera infection to stimulate their growth. But they are not so resident as normal tenants of the human intestine, and as they only occur (as far as is at present known) in

cholera subjects, the inference that they cause the disease thus appears as the only feasible theory of their nature.

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These views, of course, by no means settle the question of cholera germs, or of the origin of the disease. They pave the way, however, for further researches, and afford a basis of observation on which may be erected the superstructure of the future. It would be well, in our opinion, if, for the present, some of our medical contemporaries suspended their criticism of Dr. Koch's reports until the complete series of observations has been presented. Dr. Koch is labouring in India with a zeal born of true scientific enthusiasm, and nothing is easier than to criticise—we had almost said carp—at views which may appear to reveal startling departures from old methods and ways of thought. Dr. Koch is the last man, we should imagine, to object to criticism; but he might very fairly advise certain of his English critics to "learn to wait," as he himself has certainly learned to labour.

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A sad instance of the rapidity with which an irritant poison may act upon the system has recently been afforded by the case of a young Frenchman, who, foolishly imitating the highly dangerous practice of scratching a match with his nail by way of lighting it, infected the tissues of the finger with the phosphorus of the match. Rapid inflammation, as is usual in such a case, set in, and amputation of the arm—the only possible remedy—having been delayed, the sufferer died in a few hours after the receipt of the injury. The practice of igniting matches with the nail is not quite extinct amongst ourselves; and it seems necessary to enter a grave warning once more against its danger.

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"A Mother" writes, giving an interesting case of inherited peculiarity, which, although it does not come precisely within the category of transmission of an artificial injury, is yet worth recording, if only to prove how trivial marks of parents may reappear in the offspring. Her first child, a boy, at present aged 21 months, was seen, shortly after birth, to possess two small holes, each about the size of a pin's head, in "the upper part of each of his ears." The mother's attention was drawn to the peculiarity by her husband, who remarked the fact (of which till then she was completely ignorant), that he possessed the same marks, situated in precisely the same position as they occupied in his son. Further inquiry, amongst the relatives, showed that the child's grandfather (on the paternal side) possessed the same peculiarity of ears. No information could be obtained respecting the original cause of the peculiarity. It is striking to find such markings, not only so faithfully propagated, but descending strictly on the male side for three generations. There is no trace of the marks in the second child—a girl—of the family. It is probable that, if public interest were sufficiently aroused in this subject, we should hear of many cases in which artificial injuries had been reproduced with striking fidelity in the descendants of those who originally suffered from the lesions in question.

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Recently, we gave the statistics of Parisian suicides. It is interesting to compare the shady side of life in New York with that of the French capital. In 1883, 124 men and 27 women committed suicide in New York. Of these 78 were married, 43 single, and 24 widowed or divorced. Nine were under 20 years of age. Germans stood at the head of the list, with 70 suicides. Death by shooting occurred in 56 cases; by hanging in 19 cases; by wounding in 15; by drowning in 12; by falling from heights in 11; while 18 persons poisoned themselves with "Paris green," and 7 with opium.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE WORKING MAN'S AMUSEMENTS.—A CRITICISM.

By H. R. Dumville, B.A., &c.

There are some subjects that are highly popular—subjects that a man may, as it were, lecture to his fellow-beings about from a superior height of self-complacency and patronage. Among such subjects none are more fascinating than those which concern the welfare of the people, whether morally, socially, or politically. They have been discussed and debated times without number by statesmen, social reformers, and clergymen alike, but up to the present—socially at all events—with very little result. The actual masses of the people have not been reached. For ourselves, we must confess that we are scarcely surprised at it. When we consider how fearfully the people have been patronised by the high personages who have professed to have their interests at heart, and what an aggravating amount of sentiment has been imported into their conversion—how they have been offered, as it were, practical help with the right hand and sentiment with the left, the conditions being that they might have the one if they took the other—under these circumstances, we say, we are not surprised if the people have refused the proffered assistance, and have indignantly drawn back and desired to be left to themseves, contending that they were in need of no protection, and could do very well as they were. Actual sympathy, genuinely felt and expressed, without any affectation of superior goodness, they could understand and would appreciate, but patronised they declined to be. Strange as it may seem, the people have their feelings like every one else.

The latest advocate of their interests is Mr. Walter Besant, the well-known novelist, who, in an article in this month's *Contemporary*, writes of the "Amusements of the People," strongly urging the claims to recognition in this respect of the proposed Palace for the People in the Mile End-road. Let us in the first place do Mr. Besant every justice. We believe that he has the well-being of the people thoroughly at heart, that he feels very acutely every word he says, that he is, indeed, a perfect enthusiast in the matter; and that his remarks are entirely free from that spirit of offensive patronage of which we have previously spoken. But he is not practical—he hastily rushes to conclusions from ill-considered facts, or what he considers to be facts. The realms of imagination and the abode of fact are widely apart, and it is seldom you find a man who can excel in both. But, perhaps, a slight review of Mr. Besant's article may not be uninteresting to our readers; nor shall we apologise for placing such a subject before them, for though to some people its consideration may seem a little out of place in a journal devoted to the spread of domestic and sanitary science, it is not in reality so, since the healthy state of the mind as administered to by cheerful amusements lies as much within our province as the health of the body—indeed, one has often very much to do with the other.

According to Mr. Besant, the working man of to-day has few amusements. A hundred years ago, he could go baiting bulls and torturing unhappy bears; he could "draw" badgers and indulge in the intellectual sport of cock-fighting; he had the most stubborn prize-fights, which anybody might see; public executions, open-air floggings, wrestling combats, the charms of cudgelling and quarter

staff, the pillory, and the stocks, and a variety of other pastimes, all of which have now-a-days been taken from him—apparently not much to his regret. His amusements now consist of the theatre, the music-hall, the public-house, the Sunday excursion, and the parks; not to mention enjoyments of another kind, such, for instance, as suburban gardens (like Rosherville and North Woolwich, in London), where there are entertainments of all kinds, and dancing; tea-gardens, harmonic meetings, debating societies, &c. We should have thought after this that the working man was not so badly provided with amusements after all. We know many of our fellow-beings, not, strictly speaking, working men, who are not one whit better situated, and who never complain; but Mr. Besant is evidently determined to make the working-man a very mournful creature indeed. In this, the special aptitude of the novelist, the desire to make an artistic effect, shows itself, and he is unconsciously led away by the picture he has created. "He can read," says Mr. Besant. Certainly that is a decided advantage to him, if he have the material; but, then, *what* is he to read?—*where* is he to read? Books are expensive, and there are only six free libraries in all London, one for each half-million people. Still, Mr. Besant acknowledges, few as these are, they are not overcrowded, so far as he is aware. Surely this is putting his foot into it with a vengeance. What is the logical inference? Why, that the working man does not desire to read—that he does not recognise his deficiencies. If he will not take advantage of the existing accommodation that is free to him, how can he be expected to patronise even the People's Palace, in this department, when it be opened? Certain, however, it is that his red-hot, ultra-Radical newspaper, breathing fiery denunciation upon everybody and everything, seems quite sufficient for him at present, when he reads at all; and he is contented.

The chief cause of complaint that Mr. Beasant would seem to have against the working man, and which he would desire to remove, is that he has no resources within himself. All his amusements have to be found for him. He has no accomplishments like the man in a higher station in life. He cannot play cricket, football, tennis, or racquets; he has no gymnasium where he may practice; he cannot row; he knows nothing of dancing, swimming, singing, or acting. Truly, to us this seems an overdrawn picture. The working-man would laugh if he only knew what was said about him. Why, he can play cricket and football like anybody else if he have a mind—many of the large employers of labour have actually clubs in connection with their works, and these fight their battles under the name of the firm; and as for rowing and swimming, he has equal opportunities, too, for practising them. But perhaps Mr. Besant will reply to this, "Oh, but the man I was speaking of has not the money to join a club or go to a public bath, even of the cheapest; he has only just sufficient to keep himself and family." Then why did Mr. Besant mention the music-hall and public-house? He has money enough to go there. Truth to say, Mr. Besant is somewhat inconsistent; he has apparently but a faint idea of what he means himself, or of the particular type of workmen of whom he is speaking, and it is an equally indistinct impression he produces upon his readers. Perhaps it would be as well if the working man *were* taught some useful accomplishments, such as probably would be of interest to him on account of his daily occupation, or, if not, such as his inclination dictated; but are there not mechanics' institutions dotted all over the country where he can obtain this instruction at very trifling cost, if he likes to take advantage of his opportunities? And this draws attention to an especial point of obscurity in Mr. Besant's article. Is he speaking of the general body of working men all over Great Britain, or only of that portion which is found in London? From his treatment of his subject it would seem that he alludes exclusively to the latter. Then why does he not say so? Why style his paper "The Amusements of the People," when, in reality, it is only the amusements of the London working man he refers to?

However, there is only one thing that is evidently very clear in Mr. Besant's mind—he believes in the capability of the People's Palace to remove all these hardships and difficulties of which he speaks. It is, indeed, to be a perfect haven of rest for the London working-man, and to solace him for all his troubles. He is to have, in the first place, class-rooms, where all kinds of study can be carried on—the instructors to be, as far as possible, working-men themselves (this will not be possible at first, but there is no reason, Mr. Besant points out, why it should not be feasible after a time); secondly, concert rooms; thirdly, conversation rooms; fourthly, a gymnasium; fifthly, a library; and, lastly, a winter garden. "In other words," says Mr. Besant, "it is to be an institution that will recognise the fact that for some of those who have to work all day at, perhaps, uncongenial and tedious labour, the best form of recreation may be study and intellectual effort; while for others—that is to say, for the great majority—music, reading, tobacco, and rest will be required."

Now, all this sounds very nice—particularly nice, but will it do? will it achieve the desired effect? Not for the world would we throw cold water on any scheme for the amelioration of the working classes, but, candidly speaking, we are afraid it will not serve the desired end. And the first great objection we have to the Palace is its size. Much of the good that would arise from such an institution would be through its social influence. But the social influence of so huge a building would be practically *nil*. The working man would never get to know his "mates" in such a mansion; he would feel lost and deserted; and, probably, after the first two or three visits, it would be difficult to get him to visit the Palace any more. He would prefer his own smaller and cosier public-house, where he was more at home. He might go sometimes for entertainments, but that would be all, so that the social and refining influence would be entirely lost on him. Of course, it would do good, but not to the extent imagined. Another objection we have to it is its distance from certain localities that are almost as crowded as the Mile End-road. For, as we take it, the Palace is intended, not only for the people in the immediate neighbourhood—certainly a very neglected and ill-amused part—but for the whole of London; indeed, it will be the only institution of its kind in the metropolis. Will the working-man go so far for his amusement? Scarcely. No; a better idea seems to us the establishment of a series of such places on a smaller scale all over London, wherever the population is most crowded, after the fashion of the working-men's clubs, which have been so successful

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

in some of the provincial towns—Manchester, for instance. They certainly would not be able to offer the advantages of tuition; but, from a social point of view, they would be eminently more successful. In all other respects they could be conducted on the same principles as the People's Palace, and there might be a general managing committee to superintend the entire body. We commend this idea to all who are interested in the subject.

But it is possible to go even still deeper into the matter, to get as it were still closer to the root of the evil. Would it not be better to increase the attraction of the working-man's *home* amusements, to render that home more habitable for him, and the inducement to his friends to visit him there greater? We certainly think so. Much has been done in this direction in the past, much is still being done, and much—by far the larger proportion — remains to be done. The dwellings of the working-classes, however, are gradually being improved; old, ill-ventilated buildings are being pulled down and new ones built; stacks of over-crowded, dilapidated houses, positively reeking with disease, where it is almost impossible now to believe that human beings ever dwelt, are being swept away; habits of thrift and cleanliness are being inculcated among the poorer classes, and everything presages a brighter era for the working man than he has ever known before. It is with this conviction that we write this paper; it is with this conviction that we earnestly ask our readers to aid in bringing about as individuals and communities so desirable a consummation.

DISEASE GERMS AND THEIR RELATIONS.

By Dr. H. Fol of Geneva.

(Translated from the *Journal de Genève.*)

THIRD PAPER.

Intermittent fevers afford a good example of how easily errors arise and spread. They were at first, and without sufficient evidence, said to be caused by the palm-trees, comparatively high vegetable types, perfectly innocent of the crime of which they were accused. Late investigations point to a *bacterium* (or rod-like living particle) as the cause, but the proofs are still insufficient. To learn to recognise the enemy is certainly the most necessary thing to be done, but it is only half the task; we must then learn to resist it. The more or less effective means of combat which have been employed up to the present time have aimed, 1, to prevent the dissemination of dangerous germs; 2, to make the organism unsuitable for the propagation of the intruders; 3, to retard, as far as possible, the growth of those which have entered, in order to give the organs opportunity to throw them off. The first of these measures engrosses the attention of the health-reformers—hospitals, quarantines, and disinfectants are among the means employed. I will not enter upon a subject which touches so many disputed questions, but will confine myself to noticing certain facts and to rectifying certain very widespread errors.

Regarding infection, the nose is a poor guide; for the experiments of Mr. Miquel show very distinctly that substances in a state of putrefaction, so long as they are moist, do not emit living germs. The water of the Paris sewers holds eighty millions of germs per litre; and yet the air of the sewers contains only eight hundred or nine hundred germs per cubic mètre, about one-tenth the number found in a hospital. By inoculating a rabbit, it was shown that these germs are perfectly harmless. The moist earth does not give out living organisms to the atmosphere. On the contrary, the dust of our rooms, which we do not at all mistrust, shows about two millions of these living germs per gramme. The bacteria of intermittent fevers, which vegetate in the soil of the Roman Campagna, begin to spread in the air and to become dangerous only when the soil, dried by a scorching sun, is raised by the wind in the form of dust. It would be easy to multiply examples, and to prove that, in point of hygiene, we must be guided by sense rather than by smell. We have as yet but begun this kind of study; for how does this total number of germs which the air or water holds interest us? We would prefer to know the number of dangerous germs. The proportions would doubtless be very different from those which concise analysis affords.

Until we are better informed, we shall do well to push cleanliness to an extreme, and especially to put little trust in disinfection. The number of substances which are less injurious to man than to microscopic-parasites is very small. The best disinfectant is perfectly useless if too weak a dose be used. For each of these substances there is one proportion which will destroy the germs, and another which will arrest their vegetation but not destroy them. This last dose is the one with which we are generally obliged to content ourselves. The experiments of Dr. Koch and Mr. Miquel show that the narcotic effect begins to be effective on germs only when the substance in which they are vegetating contains, among a thousand parts, 95 parts of alcohol, or 70 of borax, or 10 of salicylate of soda, or 3·2 of carbolic acid, or 5 of quinine, or 0·6 of bromine, or 0·07 of bichloride of mercury, or 0·05 of oxygenated water. Certain of the substances indicated are useful in these doses; while others, as bromine, are impracticable. But especially let us not forget that the result is not a radical disinfection: it is merely a momentary weakening. Is it still needful to insist on the uselessness of too mild doses? We are constantly seeing carbolic acid used at less than one in a thousand parts, with the sole effect of creating a mistaken sense of security. Let me mention another almost unknown antiseptic: essence of turpentine, according to Dr. Koch, arrests the vegetation of microbes in a dose of $\frac{1}{75000}$, a quantity easily endured by man.

All these hygienic precautions are bristling with difficulties How convenient it would be to let the microbes live and to protect our bodies from their influence! Unfortunately we know but one way to effect this: it is based on a remark, made long ago, that certain diseases can be retaken only after many years, and that this freedom may be obtained by contracting the disease in a very mild form. This is the

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

principle of vaccination, and also of inoculation, employed by M. Pasteur on certain animals. The matter inoculated contains the germ of the disease from which we wish to protect the subject, but modified by a special cultivation: it is a virus weakened according to the methods of M. Toussaint and M. Pasteur. We touch here upon a question, at present much contested, in regard to the regularity of specific forms of these very low vegetable types. Herr Zopf and the school of Munich believe that the most harmless species can, under certain circumstances, be changed into dangerous ones, and *vice versâ*. The school of Berlin thinks that artificial modifications are only transient and momentary, and that the species may be considered invariable. However this may be, it is certain that, if the inoculations of M. Pasteur have no great practical importance in their present form, they at least have a considerable theoretical value. We may hope that the time will come when it will be possible to vaccinate for all diseases which can seldom be taken a second time. Who knows if it will not end by discovering the nature of the influence which the parasitic invasion exerts on the tissues of our bodies, and in obtaining the same results in a more direct way without inoculation? When we consider the progress of science in the last half of the present century, we venture no longer to answer, "Impossible."

THE ELASTIC SKIN MAN.

This individual is a study of interest, and presents an extraordinary condition. The subject is a man of 35, a native of Nuremberg, apparently healthy, and with a skin which seems normal till it is touched, when a peculiarity is observed. It is movable, extensible, and elastic over the head, trunk, and extremities—in fact over the whole general surface. Taking hold of the skin, it may be drawn out; as, for example, seizing the skin over the breast-bone, it can be drawn over almost his entire face, or that between the shoulder-blades over the back of his head. The distance to which it can be drawn from the surface depends upon the amount of skin grasped. The skin is extremely soft, and none of the movements give him the least pain. Pulling out the skin and holding it in front of a light, the circulation of the blood in the skin only is beautifully seen. The condition is supposed to be due to an absence of the tissue lying below the skin; but it is a question whether this tissue is not present, and attached to the muscles instead of to the skin. The elasticity is shown by the fact that on drawing out the skin and letting it go it flies back. It is more elastic in some directions than in others, more when drawn transversely to the natural lines than parallel with the lines. As far as information extends, the case is almost unique, there not being another case on record except that of a Spaniard about two hundred years ago. The forehead wrinkles naturally; and notwithstanding the amount of manipulation that the skin has undergone, it is exceedingly sensitive. This condition exists in lower animals, and particularly in dogs, cats, and rabbits. There is a condition known as *dermatolysis* which is analogous to that found in this man, but in this disease there is a state of marked skin-enlargement and overgrowth, while in the Elastic man the skin is natural in structure.

Mr. E. C. Stanford has discovered in sea-weeds a substance greatly resembling gum tragacanth, which may be utilised in sizing, colour-mixing, &c. The source from which it is obtained is inexhaustible.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

ORIGIN OF INDIGESTION.

SECOND ARTICLE.

Nature then resorts to more emphatic protests. Sleep comes in the form of a dull torpor that would make a nightmare a pleasant change of programme. The digestive laboratory seems to have lost the discretion of its automatic contrivances; the process of assimilation, in all its details, obtrudes itself upon the cognisance of the sensorium, and urges the co-operation of the voluntary muscles. Contortions and pressing manipulations have to force each morsel through the gastric apparatus; the lining of the stomach has become sentient, and shirks its work like a blistered palate. Special titbits can be traced through the whole course of their abdominal adventures. Undigested green peas roll on like buckshot hot from the smelting-pan of a shot tower. A grilled partridge crawls along like a reluctant crab, clawing and biting at each step. Nausea and headache strive to relieve themselves in spasmodic eructations. Vertigos, like fainting-fits, eclipse the eyesight for minutes together. Constipation, often combined with a morbid appetite, suggests distressful speculations on the possible outcome of the accumulating ingesta. The overfed organism is undernourished to a degree that reveals itself in the rapid emaciation of the patient. The general derangement of the nervous system reacts on the mental faculties, and impairs their efficacy even for the most ordinary business purposes, till the invalid at last realises the necessity of reform. He tries to reduce the number of his meals; but the lengthened intervals drag as heavily as the toper's time between drinks. He hopes to appease his stomach by a change of diet, but finds that the resolution has come too late; the gastric mutiny has become indiscriminate, and protests as savagely against a Graham biscuit as against a broiled pork sausage. He tries pedestrianism, but finds the remedy worse than the evil. The enemy has cut off his means of retreat; the necessitous system has no strength to spare for such purposes as an effort of the motive organs. But nine out of ten dyspeptics resort to the drug-store. They get a bottle of "tonic bitters." They try Dr. Quack's "Dyspepsia Elixir." They try a "blue pill"—in hope of rousing Nature, as it were, to a sense of her proper duty.

Now, what such "tonics" can really do for them is this: they goad the system into the transient and abnormal activity incident to the necessity of expelling a virulent poison. With the accomplishment of that purpose the exertion ceases, and the ensuing exhaustion is worse than the first by just as much as the *poison-fever* has robbed the system of a larger or smaller share of its little remaining strength. The stimulant has wasted the organic energy which it seemed to revive. "But," says the invalid, "if a repetition of the dose can relieve the second reaction, would the result not be preferable to the languor of the unstimulated system? Wouldn't it be the best plan to let me support my strength by sticking to my patent tonic?"

Yes, it would be very convenient, especially in times of

Why Burn Gas?—Adopt Chappuis' reflectors. They supersede gas in daytime, and promote health, comfort, and economy. They are now in great use in private houses. For prospectus address two stamps to (H.) Chappuis, patentee and manufacturer, 69, Fleet-street, London.—[Advt.]

scarcity, if a starving horse could be supported by the daily application of a patent spur. It would save both oats and oaths. Even a fastidious nag could not help acknowledging the pungency of the goad. But it so happens that spur-fed horses are somewhat short-lived, though at first the diet certainly seems to act like a charm. For a day or two, the drug stimulates the activity of the digestive organs as well as of the mental faculties, but the subsequent prostration is so intolerable, that the patient soon chooses the alternative of another poison-fever. Before long, the pleasant phase of the febrile process becomes shorter, and the reaction more severe: the jaded system is less able to respond to the goad, and, in order to make up for the difference, the dose of the stimulant has to be steadily increased. The invalid becomes a bondsman to the drug-store, and hugs the chain that drags him down to the slavery of a confirmed poison-habit.

Circumstances may differ. A dyspeptic who intends to make his own quietus within a month or two, and in the meanwhile has a certain amount of work to finish, would be justified in stimulating his working capacities by all means, in order to improve to the utmost whatever chances of mundane activity may remain to him. But he who intends to stay, has to make up his mind that recovery cannot be hoped for till he has not only discontinued his drug, but expiated the burden of sin which the stimulant outrage has added to the original cause of the disease. Nature has to overcome the effects both of malnutrition and of malpractice. The drug has complicated the disease.

In childhood, chronic dyspepsia is nearly always the effect of chronic tampering with drugs. Indigestion is not a hereditary complaint. A dietetic sin, *per excessum*, a quantitative surfeit with sweetmeats and pastry, may derange the digestive process for a few hours or so, but the trouble passes by with the holiday. Lock up the short-cakes, administer a glass of cold water, and my life for yours, that on Monday morning the little glutton will be ready to climb the steepest hill in the county. But stuff him with liver-pills, drench him with cough-syrup and paregoric, and in a month or two he will not be able to satisfy the cravings of the inner boy without "assisting Nature" with a patent stimulant.

But is it fair to denounce a palliative when the radical remedies have lost their efficacy? What dietetic reform can avail a man to whom oatmeal-gruel has become a poison? How can he invigorate his system by exercise if he is hardly able to support himself on his legs? The asthenic (or weak) stage of the disease can reach a degree when the mere suggestion of gymnastic enterprises is enough to produce a fit of nervous spasms. I have known of dyspeptics who would not have crossed a room to save a pet bird from the claws of a cat, who would have joined an expedition to the north pole as soon as to the skating-ring. Theirs is a sad plight; for a rule that holds good of unnatural habits in general, applies more especially to the chronic establishment of dietetic abuses, namely that the further we have strayed from nature, the longer and wearier will be the road of reform. Before the invalid can restore the health and vigour of his system, he has to restore his *capacity for exercise*. The first object is to create a healthy demand for nourishment. Under normal circumstances, that demand is proportioned to the amount of the organic expenditure. The nursing females of the quadruped-class require a larger amount of nourishing diet than the ordinary wants of the system would account for. During the age of rapid growth, children eat and digest as much food as hard-working men. Diabetes, the first stage of consumption and other wasting diseases, is characterised by an exorbitant appetite. Every increase of muscular activity involves an augmented demand for nourishment; *cæteris paribus*, the man who walks a mile from his shop to his home will digest his supper more easily than he who takes the street car. The hotel-boarder who makes it a rule to walk up the four flights of stairs to his attic will sleep sounder, and awaken more refreshed, than he who uses the elevator. — Dr. Oswald, in *Popular Science Monthly*.

Coarse sawdust soaked in a solution of one in ten of absolute phenol and spirits of wine makes a capital padding when enclosed in loose gauze. So treated it is a powerful antiseptic, very absorbent, and adapts itself to any surface.

Brownish-black Hair Dye.—A very good brownish-black or dark-brown hair-dye may be prepared from the fresh green shells of chestnuts, walnuts, or butter-nuts, by boiling the shells with water, concentrating the liquid to an extract, and dissolving the latter in four parts of diluted alcohol. Before applying this preparation to the hair, the latter must be deprived of fat by means of ammonia, borax, or the carbonate of an alkali.

Another Use of Carbolic Acid.—Some people suffer the most pain and annoyance from ingrowing toe-nails. If the flesh has fully embedded the edges of the nail, and the tissue has become hypertrophied about it, cutting and paring seems but to aggravate the matter. When this is the case drop a very little pure carbolic acid along the borders of the inflamed tissue, and let it soak down beneath the nail. The pain will cease as if by magic, and the irritated flesh will soon make a healthy slough. If now the nail be scraped or filed very thin in the centre only, and from that back to its root, carefully leaving the edges alone, the growth will be directed towards the middle, and a complete cure will result.

Dr. William Pratt writes concerning the subject of marriage and mortality:—"Take the male sex, and it is seen that, from twenty-five to thirty years of age, 1,000 married men furnish six deaths; 1,000 bachelors furnish ten deaths; 1,000 widowers furnish twenty-two deaths. The figures, however, become very unfavourable if the marriage be contracted before twenty. Out of 8,000 young men married before twenty, their mortality has been found to be, before marriage, only seven per 1,000; after marriage, fifty per 1,000. With respect to the female sex we find a similar advantage of marriage over celibacy, but on the same condition. If young girls be turned into wives before twenty, a like mortality befalls them which befalls the other sex. Everywhere young married people from eighteen to twenty years of age die as fast as old people from sixty to seventy years of age. The common sense and common law of Western Europe have with perfect justice marked twenty-one as the age of maturity. After that epoch, however, marriage should be contracted as soon as practicable. It is the healthiest and the happiest life; the best for the individual and for the community."

Scott's Midlothian Oat-Flour.—Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

ECONOMICAL BREAKFASTS, DINNERS, AND SUPPERS.

By Mrs. Thwaites, of Liverpool.

FOURTH PAPER.

Breakfasts.—Eggs dressed in a variety of ways seem naturally to suggest themselves to the minds of most people for breakfast. This being in England an essentially early meal, there is, it is true, one advantage in using them—they are quickly prepared. To be wholesome for everybody, eggs should be eaten before they show any trace of staleness. During the spring and summer months eggs, even imported ones, are so good that they may be classed amongst cheap and wholesome foods. One rule should be carefully observed, not only in dishes composed almost entirely of eggs, but also in those into which they enter to any appreciable extent, as farinaceous puddings, &c.—they must not be over cooked. Not only are eggs unpleasant to the taste when over cooked, but they lose their distinct and nutritive qualities, and become indigestible and unwholesome. It is even now, except in a few places in London, difficult to find an omelet that will bear any comparison with the omelets obtainable everywhere in France or Spain. In the latter country, at the smallest roadside inn, a savoury omelet, delicately flavoured and lightly cooked, is to be had at a few minutes' notice.

Even in the simple matter of boiling an egg there is a wrong and a right way. Too many people imagine that if an egg is put into boiling water and boiled for an indefinite period, it is sure to come right in the end. For the perfect boiling of an egg it is necessary to have a small pan of quite boiling water, put in the egg with a spoon, cover quite close and set away from the fire, where there is no fear of the water boiling again; in five minutes the egg will be done, and must be taken out, the white will be set, but at the same time light, while the yolk will be sufficiently cooked and hot.

Poached Eggs.—Put a shallow stew-pan on the fire, with about a quart of water, to which has been added a small teaspoonful of salt and the same quantity of vinegar. When the water boils, break an egg into a small teacup, slip the egg gently into the boiling water, and draw the pan aside; the water should not boil again. Three to four minutes will cook the egg, which must be taken up on a fish-slice, and laid on a piece of freshly-made toast.

Bacon Omelet.—Cut into small dice 2 oz. of fat bacon, put it into a small frying-pan and fry slowly until quite cooked through. There should be about a tablespoonful of fat from the bacon. Beat two or three eggs, according to size, add to them salt and pepper to taste, and a tablespoonful of milk; pour this mixture into the frying-pan over the bacon, keep it gently stirred, and hold the pan in sloping direction, so that the omelet may lie at one side when just set, and very lightly browned on the under side; turn it out on a hot dish. Eat at once.

Eggs and Tomatoes.—Mince a teaspoonful of onion, melt one ounce of butter in a saucepan, and cook the onion slowly in it; put in next, either a cupful of minced tomato or two or three fresh ones, skinned and sliced, season well with pepper and salt, and make quite hot. Fresh tomatoes will need a very little cold water and a few minutes' stewing. Beat three eggs slightly, stir them into the hot tomatoes, keep the pan over a gentle heat, and continue to stir until the eggs are set. Serve on toast.

Dinner.—*Artichoke or Palestine Soup.*—1 lb. of Jerusalem artichokes; they must be well washed, peeled, and thrown as they are done into cold water containing a little lemon-juice or vinegar. Cut them up, put them into a saucepan with 1 oz. butter, a teaspoonful of salt, a quarter of a teaspoonful of pepper, and a pinch of nutmeg; cover with either water or stock that is not very rich; simmer slowly until the artichokes are quite soft; rub them through a sieve. If only water has been used, milk must be added to bring it to a nice consistency; if stock, it is better to use more stock. Heat up, add seasoning if necessary, and serve.

Haricot Mutton.—1 to 2 lb. of the middle part of the neck of mutton; divide it into convenient pieces; next put into a fair-sized saucepan 1 oz. of dripping; when hot put in three small onions, peeled, but not cut; let them brown on all sides, and in the meantime flour and fry the pieces of mutton, with just enough fat to prevent sticking. They must be lightly browned outside, but by no means cooked through. While the two pans are in progress, mix in a basin a good tablespoonful of flour, a teaspoonful of salt, a quarter of a teaspoonful of pepper, one pint of cold water, and a tablespoonful of ketchup; pour this into the pan where the onions are frying; stir until it thickens; then lift the pieces of meat out of the frying-pan as they brown, and put them into the gravy; now cut into small pieces two carrots and one turnip; put them into the frying-pan, and, with the fat left from the meat, fry them for two minutes; put them into the saucepan; stir thoroughly the gravy; cover the pan quite close, and *simmer slowly* over a very gentle heat for at least two hours. It will be necessary to stir the contents of the saucepan occasionally.

Rice Pudding.—The excuse for offering such a simple recipe must be the fact that simple dishes are often spoiled—none more often than this. No more wholesome or palatable dish can be found than a rice pudding properly prepared. Wash 2 oz. rice in cold water, put it into a deep pie-dish, and add a saltspoonful of salt, 2 oz. of West Indian sugar, and a quart of milk. In country places where skim milk can be had, it may be used, but, having been deprived of nearly the whole of its natural fat, there must be added either ½ oz. of butter or 1 oz. of fresh beef suet finely scraped. The pudding should then be set into a slow oven to cook for two and a half to three hours. It should, when done, be a pale brown on the top and quite creamy inside. Whether fresh or skim milk be used, the addition of fresh suet to such a pudding is a capital way to induce children or delicate persons to take fat, the flavour being quite disguised.

Supper.—Steamed fillets of plaice. Skin and fillet a thick fresh plaice, wash and dry the fillets and divide them into two or three pieces. Butter a pie-dish and put in the fish, sprinkle with salt and pepper, squeeze a little lemon juice over, cover the top of the dish with a buttered paper, and set into a pan of boiling water; the water should reach half way up the dish. Time to cook about fifteen minutes.

Alcohol is often recommended as a dressing for burns and scalds, the saturated rag being covered with wadding and the air thus excluded.

Remedy for Comedones.—The remedy is acetic acid, which is conveniently applied in the following way:—Make an ointment of kaolin (potter's clay), four parts; glycerin, three parts; acetic acid, two parts. Cover the part affected in the evening; after several days most of them come out by washing with pumice soap.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

STEAM-HEATING IN HOUSES.

(From the *North American Review.*)

BY PROFESSOR TROWBRIDGE.

CONCLUDING PAPER.

THE other method, called by a strange misconception "indirect radiation," consists in conveying the steam from the boiler to small chambers constructed for the purpose, in the basement, directly beneath the rooms to be warmed. Here the steam pipe is extended into a coil, or an equivalent arrangement, by which a large amount of steam-heated surface is exposed. Flues for heated air lead from the roof of the chamber to the various rooms to be heated; an inlet duct for fresh air enters the bottom of the chamber, and the coils, or "radiators" are so arranged that the air in rising comes in contact with the heated surfaces, and passes to the apartments to be warmed with the temperature increased to seventy or one hundred degrees Fahr. Low temperature currents only are generated; and as the proper action of the apparatus can be kept up only by a continuity of flow into and out of the space to be heated, the two effects of heating and ventilation are most effectively combined.

A comparison of these various methods must include the cost of the apparatus, the cost of attendance, the cost of fuel, and the incidental advantages and disadvantages belonging to each. The open fire-place possesses the advantage of giving thorough ventilation, but it is the most expensive in fuel. The close stove is highly advantageous in point of economy, where there is little ventilation, and as this is apt to be the rule, it is perhaps the least healthful of all methods as generally applied. Both of these methods become costly in attendance as well as in fuel when the heating of dwellings of many rooms is required, and are inapplicable to large structures and public buildings as they are now constructed. The hot-air furnace system is of all the most difficult to manage, so far as uniformity and control of temperature is concerned. The danger from fire, the dust, the defective ventilation, and the impracticability of heating more than a limited space by a single hot-air furnace are other defects inherent in this system. Steam heating involves greater first cost in apparatus than any other system. When this cost and the cost of attendance and repairs are taken for a series of years, however, it is conceded that there is but little choice between hot-air furnaces and steam-heating apparatus as regards economy.

The special advantages of steam-heating are:—1. The almost absolute freedom from risk of fire when the boiler is outside of the walls of the building to be heated, and the comparative immunity under all circumstances. 2. When the mode of heating is the indirect system, with box coils or heaters in the basement, a most thorough ventilation may be secured, and it is in fact concomitant with the heating. 3. Whatever may be the distance of the rooms from the source of heat, a simple steam-pipe of small diameter conveys the heat. From the indirect heaters underneath the apartments to be heated, a vertical flue to each apartment places the flow of the low heated currents of air under the absolute control of the occupants of the apartment. Uniformity of temperature, with certainty of control, may be thus secured. 4. Proper hygrometric conditions of the air are better attained. As this system supplies large volumes of air heated only slightly above the external temperature, there is but little change in the relative degree of moisture of the air as it passes through the apparatus. 5. No injurious gases can pass from the furnace into the air flues. 6. When the method of heating is by direct radiation in the rooms, the advantages of steadiness and control of temperature, sufficient moisture and good ventilation, are not always secured; but this is rather the fault of design, since all these requirements are quite within the reach of ordinary contrivances. 7. One of the conspicuous advantages of steam heating is that the most extensive buildings, whole blocks, and even large districts of a city, may be heated from one source, the steam at the same time furnishing power where needed, for ventilation or other purposes, and being immediately available also for extinguishing fires, either directly or through force pumps.

It is only to be remarked, finally, that the most thoughtful among our physicians and sanitary advisers realise with anxiety the fact that there is a growing abuse of all these systems, except the open fire, in providing too much heat and too little ventilation. There is no mode of heating which lends itself to the correction of this evil so readily, however, as the steam-heating method. With proper care on the part of architects in arranging inlet ducts for fresh air, and ventilating flues heated by steam coils to accelerate the draft, any desirable degree of ventilation with low temperature currents may be secured. Such arrangements should, however, be studied in advance, and form principal elements in the design of a building, instead of being wholly subordinate, as is commonly the custom, to less important architectural features. It should be regarded as a fundamental principle in architecture, that the first and most important problem to be studied, after the general design of a building is determined, is the proper positions and magnitudes of heating and ventilating appliances for the structure as a whole, and for each room in particular; and not only should the details of the main and cross walls be modified and adapted to these arrangements where it is necessary, but no question of mere architectural propriety or appearance, nor even of convenience in use, should be allowed to interfere with objects so important to health as good and sufficient warming and ventilation.

OVERCROWDING IN CITIES.—"The chief dangers are to be found for the most part outside the walls of the dwelling, and arise from the crowding together of people in closely-built towns, and from what Dr. Farr calls 'the density of the population,' or their average proximity to one another. In the olden time, when this country was very much less thickly populated than it is now, and when the struggle for existence was rather between man and wild animals than between man and man; in those days the selection of a dwelling was a comparatively simple matter. It was regarded as sufficient, if it served for a defence against cold and wet, and if it kept the wolves at bay. Men then often lived in caves, or in wattled huts, and although they were exposed to many hardships, and though their filthy and gluttonous habits must have been a serious source of disease amongst them, yet they were spared many of the dangers that attend us now. At least they escaped being poisoned by a neighbour's sewage, and the free winds of heaven would sweep away much impurity from around them. But now we live in very different times. Only a few years ago the great bulk of the population lived in the country or in small towns and villages. Now nearly two-thirds of the people live in cities or large manufacturing towns, and they are constantly flocking to them in ever-increasing numbers."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

SEVENTH PAPER.—WAND AND RING EXERCISES.

"Now, young ladies, listen to me seriously a moment. In the following exercises you will be taught to gain free control over the use of your lower limbs; and as 'leg' and 'hip' are words that will frequently be made use of, I do not wish you to be inattentive to the exercises by tittering every time I use these terms. I am going to teach you some further use of the wand (Exercise 6). before putting you through more arduous exercises. Therefore, form up in line, with elbow space between each of you; stand erect, right foot pointing to the front, left foot at right angles to it, and let the left hand rest on the left hip, thumb pointing backward. Stretch forward the right hand, so that the arm is horizontal, and hold the wand perpendicularly, and in front of you, one end resting on the floor, the other held by your hand. Now, from this position, still keeping the upper part of the body erect, step out with the right leg as far as you can reach beyond and in front of the wand. In stepping out, keep the wand perfectly steady on the ground, and the elbow straight. The wands I have given you are, you will observe, selected according to your heights, so that the arm, when stretched out, is in a horizontal line with the shoulder. Now, from the position you are now in, spring back to your former erect position of 'attention.' In springing back you will have to press on the toes of the left foot, and slightly bend the left knee.

"Steady, girls; you must not sway about in that manner. This exercise is for the very purpose of rendering you able to keep your balance. Ah! Miss Maud; you are bending the right knee and not the left. That is wrong. Observe, in stepping out there are two ways of doing it: one to thrust the right leg forward perfectly straight, the left leg also being perfectly straight (by straight I mean not bent at the knees), until you recover your erect position. The second way is to throw forward the right leg bent at the knee, so that from the knee to the foot is perpendicular to the ground. When 'recovering' from this position you press on the toes of the right foot for the spring, keeping the knee of the left leg perfectly stiff. Now I shall put you through both these ways of stepping out, and I want you to repeat each ten times successively. On the word of command 'One!' stretch forth the wand; when I say 'Two!' step forward; and on the word 'Three!' 'recover'—that is, step back to the original erect position. 'One!' 'Two!' 'Three!' Very fairly done; it has made some of you warm. Stand at ease and rest!

"As a variation to this exercise, I want you to hold the wand to the right, instead of in front, so that the arm is in line with the shoulders instead of being at right angles. In this movement you will have a better means of pressing the chest to the front. The movements of the legs are precisely the same as when the wand was held to the front."

"What do you mean by pressing the chest to the front, Charles?"

"Ah, that needs a slight explanation. Let me show you. Stand perfectly erect, like this, with your arms hanging loosely down by your sides, like mine; keep the head and neck erect, but not constrained and pressed back; now inspire a deep breath, and let your chest swell outwards. If you repeat this several times it will wonderfully deaërate* your lungs, and afford a great relief if you have been stooping or bending over your needlework."

"That is not the way our governess used to keep our backs straight, and prevent us becoming 'round'-shouldered; she used to go behind us, and pull our shoulders back."

"Yes, Anne, and very likely make you feel a sharp pain between them. Your governess's method of squaring your shoulders and throwing forward your chest was a false one; the muscles were only strained for the time being while she held the shoulders back, but they sunk into their place again as soon as the hold was released. Now the simple method of breathing I have just described will not suffice to give you square shoulders, nor prevent them becoming 'round.' The wand, dumb-bell, and other exercises are to cure you of any tendency to roundness; but the benefit you receive from 'pressing your chest forward' as I have described is this—the deep inspiration you take presses out the thorax, that is the chest, the ribs expand (especially so if you breathe deep down), and that bone† you find just beneath the 'apple' of the throat is pressed out slightly upwards, and the bone‡ that is in the centre of the chest, the one that runs down between the ribs, and to which the cartilages of the ribs are fastened, is pressed forward by the amount of air inhaled. When these two bones stand out in their normal position, you have the greatest capacity of lung-power, and as regards the build of the chest, you have a perfect one, or a natural bust. If, however, these bones—the clavicle and sternum—sink in between the bosom, you are not normally developed; you are weak-chested, and consequently more liable to consumption.

Amber.—*Nature* remarks that though the annual yield of amber from the Baltic Sea amounts to about 300,000 lb., there is sufficient to furnish a supply for 30,000 years.

We learn from "Drinks" that soda and milk, now recognised as a popular beverage, may shortly lead to "sparkling milk." This will, of course, be milk impregnated with carbonic acid gas by the usual mechanical means, and bottled in the usual way as ordinary effervescing drinks. It is stated that this aërated milk will keep for an indefinite period.

Two cases of chronic mercurial poisoning are mentioned by Neukirch, interesting enough owing to the cause—viz., the impregnation of the air of patients' sleeping apartments with mercurial vapour from imperfectly amalgamed looking-glasses. He supposed that such cases, in obscure forms, may be frequent enough, as one of his had suffered for four years before the cause was discovered.

Sugar is a vegetable product; at least, in so far as we know it as a food. Ancient civilisation knew little or nothing of sugar, except as honey. Consequently bees occupied a far higher position among the ancients than they do with us. The bees of Hymettus were justly renowned, and so were those of Hybla; just as the honey of Narbonne is esteemed with us. But when, speaking broadly, all the dishes were sweetened with honey, its importance was infinitely greater than it is now.

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*"Aërate" is a term applied to the impregnation of a body with carbonic acid gas, "deaërate" I use in the sense of expelling that gas.

† Known as the "clavicle," or "collar-bone."

‡ Known as the "sternum," or "breast-bone."

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOME WINTER RESORTS.

Southern and Swiss Health-Resorts. By Dr. Marcet. (London: J. & A. Churchill.)

II.

Continuing our remarks on Nice from the last paper, when we were interrupted by considerations relating to space, it is in its position a highly fortunate place, being almost surrounded by hills, which thus protect it in a great measure from the wind. So, for the matter of that, are most of the health-resorts on the south coast of France, and they derive their reputation almost as much from the sheltered nature of their position as the actual difference in latitude; but we think Nice is even more fortunate in this respect than the rest. Only on the north-westerly side, comparatively speaking, is it undefended, for the hills of St. Phillipe are not sufficiently high to form much of a barrier. To the eastward it is sheltered by Mont Boron, some 400 ft. high; while extending from this in a northerly direction are Mont Gros and Mont Vinaigre, which effectually screen it from the north-easterly gales.

Close by these mountains, running north and south, and dividing them from another eminence called Mont Chauvre, which lies in a more westerly direction, is a deep valley, and in the valley a river, the Paillon. Rather a tiresome river this. It is all very well when the weather is fine and dry, presenting then just the appearance of a small, clear stream, at which the washerwomen of the town can wring and beat their clothes to their hearts' desire as it leisurely wends its way towards the sea. But, after heavy rains, its aspect is changed completely. Swollen to some ten times its ordinary dimensions, and having now more the appearance of an infuriated mountain torrent (which in reality it is) than a calm, respectable river, it comes rushing down the hill-side with an impetuosity that is alarming. Away it goes, splashing and foaming, ever working itself into a higher state of noisy indignation, towards the sea, and, of course, the sea, probably not being in a very good humour itself under the influence of the gale, comes dashing in towards the land, and a nice meeting there is between the two, you may be sure, the water by force of the contact being driven up to an immense height, and drenching all the spectators on the beach as it falls down with spray. It is quite one of the sights of Nice, this conflict of the angry little river with its more formidable opponent the sea; the event usually happens about twice during the season. Our chief cause of complaint, against the Paillon at such a time is that it simply defiles the beautiful Mediterranean for a considerable distance round with mud. Perhaps it does it out of spite; who knows?

The climate at Nice is very much the same, as we before remarked, as that at Cannes, the latter, according to Dr. Marcet, being slightly the warmer of the two in winter, an opinion which is fully substantiated by the observations during twenty years of Monsieur Teysseire at Nice, as compared with those Dr. Marcet himself made at Cannes, while it is somewhat strange that the mean temperature at Nice during December should be 2·2 deg. F. higher than at Cannes, though for January and February it is much lower. Of course, it is not necessary to point out that the climate of Nice—that is, the town itself—differs very considerably from the climate of the surrounding hills. The most popular of these during the spring months is the Simiès Hill, an offshoot of Mont Chauvre, before mentioned, and a distance of some fifteen minutes' drive from the town. The sides of the hill are covered with villa residences, and from the summit you can get a very beautiful view of Nice, the bay, and surrounding mountains. The air is particularly pure and bracing, and Dr. Marcet's experience goes to prove that it is often more beneficial in cases of chronic bronchitis and asthma, unaccompanied by inflammatory symptoms, than the atmosphere of the lower-lying town. In this matter of climate, the Simiès Hill is much resembled by Hyères, with this difference, that the air of the latter place is the less irritating of the two, a result probably due to its inland position, it being some three miles from the sea, whereas all the other health-resorts of the French and Italian Riviera are situated in its immediate vicinity.

If we wished to get away to a place where we could be utterly quiet, quite oblivious of the noisy bustle of the world outside, and vegetate, we think we should go to San Remo, on the Italian Riviera, some sixteen miles east of Mentone. The scenery round about is extremely beautiful; and, as Dr. Henry Bennett remarks in his book, "Winter and Spring on the Shores of the Mediterranean," no one can have any idea what sources of pleasure lie in the surrounding valleys and mountains until they have thoroughly explored them. The climate is very nearly the same as that of Mentone, and the temperature considerably higher than that of Cannes or Nice, while there is not that sudden fall in the temperature after sunset which is such a distinguishing feature of Cannes, and against which the invalid has so sedulously to guard. Indeed, the mean temperature of San Remo is higher than that of Cannes, probably not so much because the days in themselves are warmer as that the nights are less cold.

Mentone and San Remo in many respects closely resemble each other. They have practically much the same climate, and both possess the advantage over Cannes and Nice of having few exceptionally cold nights. It is this advantage, over and above that of a higher temperature generally, that has made Mentone such a favourite resort for consumptive patients. From observations taken it would seem that Mentone, in December, is no less than 3 deg. higher in temperature than Cannes, 1 deg. higher in January, and about the same temperature in February; or, taking the mean temperature for the six months from November to April, Mentone has an advantage of 0·7°. These facts are the results of certain observations made by Dr. Andrews, of Mentone, and Dr. Marcet, during five winters at Cannes, and it is not difficult now to see why Mentone should be so popular with this class of patient. The relative atmospheric humidity is the same at both places, but whereas rain falls more frequently at Mentone than Cannes, the actual rainfall, as Dr. Marcet points out, is less, so that not only does it rain more at the French watering-place, but it rains more heavily at the time. This, however, our author tells us, is not to be wondered at, since "the cold, damp, north-easterly, and easterly winds being felt less in Mentone that at Cannes, there is a diminished tendency to condensation of moisture." After this it is perhaps more interesting to know that, according to Dr. Bennett (whom we notice Dr. Marcet quotes rather extensively in his book) the health of the native population at Mentone is exceptionally good, and Dr. Bottini, who practised for over half a century in the district, also tells us that the average duration of life there is 45 years, while a very considerable proportion of the inhabitants live to over 70 years of age.

The island of Madeira is scarcely so well patronised by

invalids as it might be. No doubt this is in a measure owing to its distance from home; and many people, when in a weak state of health, nervously shrink from a sea voyage; but what, after all, are four days—sailing, we will say, from Dartmouth on Friday, and reaching Funchal, the chief town of Madeira, on Tuesday? And really, under the tender care of the "Donald Currie" line of steamers, you hardly think of them at all, unless it be to sigh with regret when they are over, and wish that you were going on to the Cape. The chief advantages Madeira offers are a high temperature, remaining very much the same all the year round, and a comparatively moist atmosphere. The place is highly suitable for patients who, after living a number of years in a hot climate, like the East or West Indies, have returned home with an enfeebled constitution, the result of fever or liver disease, and to whom the air of Cannes or Nice, though well enough in the summer time, is too cold in the winter, or who from any other cause, have lost the power of generating vital heat. The mean winter temperature at Maderia is no less than 13·1 higher than that of Cannes. It is warmer during the winter, and colder during the summer than any of the other health-resorts we have mentioned, and the temperature varies very little, either between one season and another, or from day to day. About three times during the summer a hot, dry wind, the *Leste*, corresponding to the African "sirocco" or "harmattan," sweeps across Madeira with great velocity from the east, and, for the time being, matters are anything but pleasant, the lips and skin dry, throat parched, and a most objectionable temperature, sometimes as high as 90 deg. in the shade; but this only lasts, as a rule, for three days, and then all is over. This leste wind has even been known to bring locusts with it, transporting them a distance of 360 miles over the sea; and most unfortunately they were alive when they arrived.

As a rule consumptive patients do not derive much benefit from Madeira, and we should scarcely recommend the place to them, except under exceptional circumstances. In some cases, however, the climate undoubtedly affords relief—indeed, in a matter like this it is impossible to lay down a hard and fast rule. But it is in its tendency to allay all inflammatory affections, whether of the pulmonary or digestive organs, the muscles, joints, or other parts of the body, that Madeira is chiefly to be advised. Therefore in many of the cases of inflammatory bronchitis and asthma for which, as we pointed out in the previous paper, the dry climate of Cannes or Nice would be injurious, the warm, moist atmosphere of Madeira would be more highly beneficial.

With every year the number of English people seeking the benefit of these southern health-resorts, some few of which we have briefly commented upon in these papers, is increasing. Travelling expenses are becoming cheaper, modes of transit there and back more convenient, and the comfort of English visitors on the Continent better considered. The natural shyness, the "stay-at-homeism," of our insular character is getting rubbed away. We want to see more of our neighbours, to imbibe their fresh air and feel better for it; and this desire is spreading to the mass of the people. There is a greater inclination also to look after our health as well as our recreation when we go away from home, if we be not practically invalided—men and women are beginning to take a stronger, more intelligent interest in these matters. It is in this belief that we hope shortly to commence a series of articles on "Foreign Health-Resorts," treating the subject in much the same way as we did the "English Health-Resorts" last year—articles which, we have reason to believe, afforded much satisfaction and information to our readers.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

International Health Exhibition.

LONDON, 1884.

SIXTH PAPER.

MEMORANDA FOR THE GUIDANCE OF EXHIBITORS,

Drawn up by the Sub-Committees and approved by the Executive Council.

Dress.

Class 17A has been added to the Classification at the suggestion of the Sub-Committee. Under it should be displayed a number of illustrative specimens to show the comparative value of different dress fabrics, with reference to their "warmth," their hygroscopic properties, the influence of the colour of materials in modifying the effects of sun-heat, and the like.

It would be well to show under this class models and drawings illustrative of the effects of poisonous dyes (in clothing) upon the skin. Materials dyed with poisonous and non-poisonous dyes could be placed together for purposes of comparison.

The scope of this class may be considerably extended, and the section be made to demonstrate the scientific bases of healthy clothing.

The subject of Underclothing is of such great importance that the Sub-Committee are prepared to arrange for a special display of materials and garments, &c., worn next to the skin. Some of these will be shown in a special annexe, to which females alone will have access, or which will at least not be open to both sexes at one time. As one special feature in such an exhibition, the Sub-Committee would suggest a series of models displaying the first clothing of infants as adopted in the various countries of the world—so far as such examples could be obtained.

Class 13. It is suggested that, as far as possible, dresses and costumes shown should be displayed upon lay figures, and that the exhibition of ancient costumes should be encouraged in preference to modern reproductions of the same.

Class 15. It is suggested that the subject of suitable dresses for extreme climates should be demonstrated with as much detail as possible.

Class 16. Under this class it is suggested that especial attention should be given to dresses suitable for women engaging in exercise, such as dresses for mountaineering, for the moors, for swimming, for horse exercise, for gymnastics, and the like.

Class 17. Under this class should be actually demonstrated the value of certain substances used for making muslin and light fabrics non-inflammable. The various artificial starches made for this purpose should be displayed, and their use and effect demonstrated.

The dress of female operatives engaged among machinery may be dealt with in this class; also special dresses recommended or in use in factories and occupations of special character, *e.g.*, dresses for lead and other factories; dresses of nurses and sick attendants; of soldiers and sailors; life-saving dresses; firemen's dresses.

Class 18. Under this class will be exhibited dress injurious to health, casts of feet deformed by boots, &c., spinal and thoracic deformities ascribed to tight-lacing; models to show the position of the viscera displayed by such practices, and the like.

Class 19. The Sub-Committee would suggest the following under this heading:—Machine *versus* hand-weaving; glove-making by machinery; lace-making, illustrated by operatives from Honiton, Nottingham, Brussels, &c.; the making of hats; the making of boots and shoes, and of lasts for the same; the dressing of furs and certain skins; sewing and knitting-machines, &c. (in limited number); the manufacture of waterproof fabrics; the making of crape and some special fabrics; the application of jute to the manufacture of dress fabrics; imitation fabrics.

Alcohol from Melons.—A French investigator has succeeded in extracting alcohol from the pulp of melons. Alcoholic fermentation does not take place in the pulp, notwithstanding the sugar it contains, until sulphuric acid is added. Five litres of alcohol can be extracted from thirty kilogrammes of pulp.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

DESTRUCTION OF DISEASE GERMS BY FILTRATION.

Sir,—In availing ourselves of your request that we should place before you evidence regarding the destructive power of spongy iron on disease germs, we beg to submit :—

1. That the "germ theory," however strong the indications in its favour are, is still a theory, therefore surrounded with a certain amount of doubt, and the same must be the case with all questions bearing on this subject.

2. That there is every reason to believe that such epidemic diseases as cholera or typhoid are caused by bodies of the nature of bacteria. These are words used by Prof. Huxley. Similarly, Dr. Cameron, M.P., in his classical little work, "Microbes in Fermentation, Putrefaction, and Disease," remarks that precisely similar organisms to those occurring in the body in certain diseased conditions are inseparably connected with the processes of fermentation and putrefaction.

3. That the specified zymotic disease germs have not as yet been isolated with sufficient certainty to allow of our tracing their presence or absence under the microscope.

4. That direct experiments upon animals are impracticable, because no animal—*perhaps* excepting the monkey—takes human typhoid or cholera.

5. That there is reason to assume that ordinary bacteria and disease germs are destroyed under similar conditions and by the same agents.

More might be said about every one of these points than would fill the space which, with all indulgence, you can allow us, and we must therefore confine ourselves to such further proof regarding them as you may desire. We now contend that Prof. Bischof has proved in his papers communicated to the Royal Society and the Society of Medical Officers of Health, that wet spongy iron has strong antiseptic properties. We further contend that Mr. Frank Hatton, in the paper referred to in our last letter, has fully confirmed these conclusions, and that he, in fact, found that wet spongy iron, even when added to liquids, *without any mechanical filtration*, has a more destructive action on bacteria than several of the strongest poisons and antiseptics. This action evidently must be *chemical*, be it actual destruction or poisoning. In connection with Mr. Hatton's experiments, any one may repeat the following. Fill some vessel to one-half, say, with well-made fresh butter. Fill up with water and the butter will soon putrefy. Now place into the top part of another vessel, similarly filled with fresh butter and water, some spongy iron tied into a piece of calico. If it is then found that the butter does not putrefy in the latter case, what must be the explanation ?

The researches made on the subject at Netley (XIX. Army Med. Rep., p. 170) also point to the destruction of bacterial life by spongy iron.

Lastly, Professor Elias Heyman, of Stockholm has repeated and confirmed Professor Bischof's experiments ("Hygeia," 1881).

We all must bow to practical experience. Whatever construction you may put upon the extracts from reports, which we beg to enclose for your perusal, it is undeniable that it was feared at one time that, owing to the state of the water supply, zymotic disease would become epidemic in the military station at Fort George, in Scotland, and that in the following year, after spongy iron filters had been introduced, all complaints, "so loud before," ceased. It appears that at Shoeburyness the garrison was surrounded by epidemic typhoid, and not a single case occurred amongst the troops, which had been provided with spongy iron filters. Such cases certainly support, to some extent at least, the theoretical considerations in the first part of this letter.

The difficulty which many experience in following our arguments is that they cannot understand how such a harmless substance as spongy iron could possibly be endowed with a destructive power which, as Mr. Hatton showed, several strong poisons fail to possess. But, sir, the presence of protosalts of iron in a soil is looked upon as a sure sign of barrenness, which means that such salts are destructive to vegetation. When water passes through spongy iron, ferrous hydrate and carbonate are formed. These are the most unstable ferrous compounds, therefore the most powerful in their chemical action. Disease germs being generally classified amongst the vegetable kingdom, there is nothing whatever surprising in the supposition that they are destroyed by the same influence as other plants.

Taking all this into consideration, we think we are justified in claiming for wet spongy iron, with a considerable degree of probability, the destruction of disease germs. At any rate, we submit that this probability is infinitely greater in favour of spongy iron than of any other known filtering medium. Indeed, not even an attempt has been made to produce any such evidence in favour of any material but spongy iron. In a paper read at Berlin on June 23, 1883, Dr. Koch says :—

"Prof. Von Rozsaheggi has similarly tested a number of filters (by means of Dr. Koch's nutritive gelatine), such as are frequently used for household purposes. Almost without exception, they did not diminish the bacteria. In one instance which has recently been investigated by me, I have shown that a filter may actually deteriorate the water. The coarser impurities accumulating in the filtering medium, putrefy, and cause large numbers of bacteria to be mixed with the filtered water."

These experiments, we have been informed on inquiry, do not include the spongy iron filter, which is still under investigation. We are thus confident that in the course of time the case of spongy iron will be still further strengthened, and if Dr. Koch takes this matter in hand, we may perhaps hear something about the action of spongy iron on the bacillus of cholera.—We remain, Sir, your most obedient servants,

The Spongy Iron Domestic Filter Company.

22, New Oxford-street, W.C., *March* 18, 1884.

[This letter will be subsequently noticed.—Ed. H.]

QUERIES AND ANSWERS.

[Important to Correspondents.—We have again to call attention to the fact that, while every effort is made week by week to deal with the enormous mass of correspondence which reaches us, we cannot undertake to answer queries save as space permits. All queries are attentively considered and replied to, but in no case can any query be answered in the same week as that in which it is received.]

[A number of replies have been crowded out of the present number owing to pressure in space. These replies will be duly given next week.]

[Letters addressed otherwise than to the *Editor* of Health, at 74, Great Queen-street, London, W.C., will not be attended to.]

GENERAL.

Intricate.—We have never heard of the process to which you allude.

J. Coleman.—Apply to the publishers, who will send you a complete catalogue of their works.

G. Shore.—The gentleman resides in London, and you will find his address in the "Directory."

Carvill.—Counter-irritation is a term applied to medical means for inducing the absorption and disappearance of indolent swellings and like ailments. The blister is a familiar example of this process.

G. B.—Saint Vitus' dance is named St. Weit in Germany and St. Guy in France. It usually affects girls between six and sixteen, and, as a rule, is confined to the left side.

J. Aitken.—See our articles on "Starvation."

Oxy.—We should imagine your best course would be to place yourself in the hands of a respectable solicitor. If the quack threatens you, he should be dealt with severely under the charge of attempting to extort money by threats.

Invalid Carriage.—Miss Ellen Millman, Tenby, South Wales, would be glad to know where a second-hand invalid carriage could be procured for a child, aged seven years, suffering from spinal complaint, and whose parents are extremely poor.

T. C. Packenham.—The system is a good one. We have found it serviceable. It may not suit every person equally—no system can—but it is the best of the kind we know.

O. E. R. S.—Huxley's "Lessons on Physiology" (Macmillan), and Cleland's "Physiology" (Collins, Sons, & Co.) are likely to suit you. More advanced treatises are those by Dr. Foster (Macmillan), Hermann, and Carpenter.

SANITARY.

C. Dewar.—The filter subject is undoubtedly a sore one, each firm claiming superiority over all its neighbours. We believe that various filters may each satisfactorily discharge their duties, but the question you raise is a far more serious one. See "Letters to the Editor" and "Notes by the Way," Health, Nos. 49 and 51.

J. G. C.—We believe the works in question were carried out by a perfectly competent engineer.

Onyx.—For ventilating gas-burners and globes apply to any manufacturer of sanitary apparatus, or to a wholesale house dealing in gas-fittings.

MEDICAL.

G. O.—We think you should try the effect of inhalations, such as that recommended to "T. S." in Health, No. 50. If you require a tonic, that recommended to "Allan Grey," in present number would suit you. In all probability you suffer from a slight form of bronchitis. A bismuth tablet should aid in relieving the stomach acidity.

Allan.—You appear to suffer from the usual symptoms of indigestion. See advice given to "A. H. E." in present number.

H. L.—Yours is a case in which you should see a good surgeon, who alone can pronounce as to the nature of the swelling. We can send you the address of such, if you desire it, on receipt of a stamped addressed envelope from you.

J. Shaw.—You appear to require a tonic. The following should suit you:—Citrate of iron and quinine one and a-half drachms, carbonate of ammonia two drachms, tincture of orange-peel two ounces, water to make up six ounces. A tablespoonful thrice daily. If not better write again.

Dart.—Use cold sponging every morning. Sleep on a hard mattress. Avoid fluids late at night, and take plenty of open-air exercise. And for a short time take the tonic recommended to "Allan Grey," in present number of Health.

Tokar.—In a case like yours, we should strongly urge you, if convenient, to go for a thorough change. The advice given to "Dart" above should be followed. What you complain of is perfectly natural in a healthy person, and it is only quacks who exaggerate its importance. The step you propose to take should be regulated strictly by your general health.

Mac.—Give up tea and coffee, and try cocoa instead. Rest after meals, and see general advice given to "A. H. E.," in present number regarding indigestion. Glad to be of any further service, if needed.

Hygeia.—See advice given to "Anxious Inquirer," in Health, No. 49. You must certainly give up the habit of trifling with aperients. If you have not tried a vegetable dietary we should recommend you earnestly to try the effect thereof. Such a dietary often cures obstinate cases.

S. A. Jonah.—We do not for a single moment place the slightest reliance on the advertisement you send. The person who advertises is a qualified medical man; but his practice of advertising and the statements in the advertisement are of such a nature as to practically make the announcement one savouring strongly of quackery.

James Govan.—Do not be morbid or think you are in any way ill. What you complain of is very often perfectly natural. See and follow advice given to "Dart" in present number of Health.

Jochim.—See advice given to "Hairy Face," in Health, No. 49.

Student Anxious.—See advice given to "Dart" in present number. The tonic you mention will do you good. Above all, avoid morbid thoughts, and do not fancy you are in any way ill.

A. H. E.—We advise you to give up tea and coffee entirely, for a time at least, and let your food consist of milk, eggs, light soups, puddings, &c. A little beer might do you no harm with dinner, but stimulants should be avoided. Rest after meals is essential, and you might benefit from taking a little Pepsine with your food.

Much Perplexed.—The question you ask is a difficult one to answer. We know the book to which you refer, and, although not a quack production in any sense, some of its statements are over bold, and require modification. We should say that individual circumstances, after all, most fully determine the best course for you to pursue. Perfect health may frequently be enjoyed, contrary to the opinion of the book you name.

S. F.—Any medical man will make such an analysis as you require. We can send you an address (if required) on receipt of a stamped addressed envelope.

Smith.—1. Yes. 2. The tonic recommended to "Allan Grey," in present number of Health. 3. You do not enclose any such paper as that to which you refer. 4. Person you name is a qualified medical man, but a thorough quack in his advertising practices and somewhat injudicious statements. 5. Any qualified practitioner in Manchester is far more competent to treat your case than any advertising quack, qualified or not.

William.—Egyptian loufs can be obtained at any chemist's. Give up tea and coffee, and try the effect of a little "Æsculap" water taken in the mornings as a mild aperient. Remember that habit has much to do with the cure of the ailment of which you complain. Select your food wisely, and try vegetarianism. Take more open-air exercise. Growth can only be increased by good food and plenty of open-air exercise. Retire early to bed, and see that your room is well ventilated.

Crypto, &c.—Kindly exercise in future a more judicious choice of a *nom de plume*. We have no space to spare for elongated foolishness, and in future address the Editor, not Publisher. You suffer from symptoms of indigestion. Rest after food, and take a little "Pepsine" with the food. For face pimples try the lime powders recommended to "Hairy Face" in Health, No. 49.

Lamp-post.—Not if taken judiciously as a cleansing measure once or twice weekly. The water ought not to be too hot in any case.

J. X. J.—Apply sulphur ointment for itch as follows:—Sublimated sulphur two drachms, carbonate of potass one drachm, lard one ounce. This ointment is to be rubbed in firmly over the affected surface, except face and head, for three successive nights. On the fourth day it must be washed off by a warm bath, and the underclothing changed. See to your clothes, and have them fumigated with burning sulphur, or destroyed, as the parasites will most likely remain therein.

Agamemnon.—We fancy you simply suffer from indigestion. Give up tea and coffee, and follow, as far as possible, the recommendations given to "A. H. E.," in present number of Health. Pepsine should be taken with your food, and rest after food is necessary. Write again if not better.

Tom.—You cannot expect to be well in a short time. You are over-impatient. Continue to follow our former advice. From your own accounts there is nothing whatever in your case to indicate that you are in any way ill. What you mention is perfectly natural. Give up morbid thoughts.

W. Murray.—Attend strictly to cleanliness, and wash frequently. Use a little plain Vaseline to the part. See advice to "Dart" in present number, and don't be morbid, inasmuch as you suffer from no disease. Time, patience, and attention to our advice will effect a cure.

Despondent.—As far as we can judge, we simply think you are out of sorts. Certainly, a sea voyage would benefit you much, or even a simple change of air. You must not be despondent. Let your food be light and nourishing, avoid constipation, and take a little "Pepsine" with your food. Possibly a change of air would relieve all the symptoms of which you complain. Glad to be of any further service.

Ninon.—If you look through the paragraphs of general hints of recent numbers of Health, you will find a cure for corns. Have your boots made roomy. 2. Not except by simple attention to the nourishment of the body. 3. Try a little good claret taken along with meals. 4. Cod-liver oil cream, as advertised in our columns, would suit you better than the plain oil.

Walter Brown.—Don't take purgatives. They will do no good, and may do harm. You only require care and attention in the matter of your digestion. Let your food be largely fluid for a time—milk, soups, Brand's Beef Essence, puddings, &c.; and after each meal see that you rest. If you do not rest after eating, you are certain to continue to suffer. After meals take a powder, consisting of four grains powdered rhubarb and three grains pepsine. Write again, if not bettered.

E. R. F.—See that your room is well ventilated, and try the effect of a green-shaded reading-lamp. Use your eyes as little as possible at night for a time, and bathe with cold water frequently. If not improved, write again.

South Wales.—We believe the preparations are good, but we prefer the tonic you name, which is well adapted for you. See also advice to "Dart," in present number of Health.

C. S.—Fresh fish, boiled or fried—haddock, whiting, cod, &c.; also oysters and shell-fish generally. An ordinary diet, however, into which fish enters, should suit you. The tonic recommended to "Allan Grey," in present number of Health should suit you. It is not to be taken continuously or for long periods.

Imogen.—In some cases the opinion you name may be correct; as a rule, if any ailment exists, such a step only intensifies it. Let the patient take fifteen drops *Fer Bravais*, in water, thrice daily; and use weak injections of Condy's Fluid (one part to twenty or thirty water) and tepid water thrice daily for a time. Rest is necessary, and attention to general health. A little Pepsine should be taken with the food daily. Glad to be of further service, if necessary.

J. J. Rousseau.—Use weak injections of Condy's Fluid and tepid water (one part to twenty or thirty water) thrice daily. You must rest; pay great attention to state of bowels; no stimulants; and take the *Fer Bravais* as above ordered to "Imogen." A change of air (say to the sea) would be very likely to hasten your cure.

A. W. G.—Thanks for cutting.

James Wright.—Try the Moorfields Eye Hospital, London. Inquire at any of the hospitals regarding the pay-system. At St. Thomas's Hospital there are wards for paying patients, and a good eye department as well.

Dreadnought.—See and follow advice to "Dart" in present number of Health. Don't be morbid. Your cure consists in cold sponging, open-air exercise, sleeping on a hard mattress, and avoiding all stimulants.

El Teb.—We fancy the book is published by Messrs. Kegan Paul & Co. Dr. Smith's "Foods" is published by that house. Albuminaria is a kidney disease of complex nature and varying type. It is always of serious nature. We cannot undertake to describe either disease or treatment in our columns. Consult a physician.

Maritus.—We do not think there is any harm, save that, according to some authorities, the practice is apt to produce nervous symptoms in some cases, or even to set up irritation. We should say it could be hurtful (if it is injurious at all) to you only. We confess that, while there are foreign authorities who condemn the practice, we have never met with any evidence to show that it is hurtful. You must, by careful watching, be the best judge of your health.

James Ross.—See hair lotion recommended to "Russell," in Health, No. 48.

Crichton.—Give up coffee entirely. See advice to "Walter Brown" in present number of Health, regarding light diet for a time, by way of giving the stomach rest. Take the powder recommended to him, and, above all, rest after meals. Glad to be of any further service. Have you tried vegetarianism? It might suit you.

Goldenrod.—Use camphorated chalk, and a moderately hard brush, and brush the teeth morning and night.

Exile.—We fancy you would be the better of alternating with the mercury (say for a week or ten days at a time), a mixture consisting of iodide of potass, 2 drachms; infusion of columba, 6 oz. —a dessert-spoonful thrice daily. Use a little chlorate of potass as a gargle for the mouth. Clothe warmly, avoid stimulants and over exertion. Your cure should be complete in about two years or so; but you had better see an Edinburgh or Glasgow surgeon periodically. We can send you address of a reliable authority in either place if you send stamped addressed envelope.

James Scouler.—Symptoms too complex for popular description. There is no fear of your health, we should say. Don't be morbid. Your symptoms are only those of a little indigestion.

A. B. C. W.—Moderate doses of quinine (say 2 grains sulphate of quinine in the form of a pill twice daily) would be highly useful in your case, and a change of climate is likely to be beneficial. Avoid all damp districts. Attend carefully to general health, digestion, warmth, &c. If any pain exists, 15 grains bromide of potass, taken in a wineglassful of water on going to bed, may be serviceable.

S. A. S.—Consult advertising pages of *Lancet* for addresses of those who profess to cure stammering. A book has lately been advertised in the *Pall Mall Gazette* on this subject. You should see it. We know of no cure, save time, patience, and special exercises.

Psoriasis.—We fancy you are in a low state of health, and are possibly overworked. If you send a stamped addressed envelope, we think we can put you in the way of obtaining a medical opinion which may benefit you. The skin disease from which you suffer is probably only an indication of general weakness. If your general health becomes re-established, you may possibly require no further treatment. We have every sympathy with you in your troubles.

A Mother.—We should recommend the application of a little pure Vaseline as a preliminary measure. Bathing likewise with a solution of chloralum and water—one part chloralum, and say ten of water—may also relieve the symptoms. If this does not do good, write again.

H. T.—1. Malignant growths rarely appear so quickly; but it is difficult to say. Pain should be a sign of malignant nature. What is said to be the nature of the growth? 2 and 3. Depends on nature of disease. If you state symptoms to us, we will endeavour to assist you to the best of our ability. Possibly, the sudden growth *may* have been only an awakening of some long-existent lesion. What is the patient's history?

R. Coombs.—We still recommend you to attend strictly to cleanliness, washing night and morning with tepid water and Cleaver's Terebene Soap. By the use of a little pure Vaseline applied to the part you will probably obviate your annoyance. As you say the affection is periodical, we should advise you to take, when the attack threatens you, a little quinine.

Reaping.—Don't be morbid. You will get quite well by attention to very simple rules. Exercise strict cleanliness, and use injections of tepid water as recommended to "Imogen" in present number of Health. Take also the tonic recommended to "Allan Grey" in present number. Cold sponging, if it can be borne, should be practised by you each morning. Avoid all stimulants and let your food be light. You suffer from no serious ailment whatever.

A. M. W.—Try the effect of a saturated solution of boracic acid for washing the parts, instead of alum. A course of Turkish baths, carefully taken, so as not to weaken you, might also do good. Let us know how you are in a few weeks.

J. H. G.—[Will please note that he should address the Editor of a periodical, and not the publisher, where information is requested.] For the ailment you mention the diet should be non-stimulating. A blue pill, or podophyllin pill, should be taken occasionally. When an attack comes on, medical advice must be sought, as the ailment may arise from a variety of causes, each requiring the attention of a physician.

J. Targett.—Yes, natural, if not occurring too frequently. Avoid quacks and advertised medicines.

Cymro.—1. You might use a lotion, consisting of one part myrrh, eau-de-cologne sixteen parts, borax one part, water and syrup three parts each. 3. The practitioner is a qualified medical man. We know nothing of his method of treatment.

E. J. D.—Simply apply an ordinary porous plaster over the seat of the pain. Should it continue, have the chest examined by a surgeon. The probability is you have merely sustained a bruise. 2. You should have your eyes examined by an oculist. The typewriters you inquire about were noticed in Health in three articles, which you will find in the part for October last.

J. R.—We should advise you to try the effect of taking cod-liver oil for a lengthened period, after your food, by way of strengthening you. If this simple treatment does not improve your health, we should advise you to undergo a thorough examination by a physician. It is quite evident you require rest, and, in all probability, a change of air would likewise be beneficial.

Anxious.—You are evidently highly nervous, and you have undoubtedly a tendency to magnify your complaints. We think we can most satisfactorily aid you by offering to send you the address of a reliable London physician, who will examine and advise you regarding your state.

Clement.—You were surely replied to in a previous number under another designation. We can only repeat here that the child should have the syrup of iodide of iron with the cod-liver oil. The medicine should be given after meals. Avoid using enemas, and give a simple liquorice powder instead. See to the diet, and that there is nothing irritating in the food.

Aristotio.—There is no doubt you have had a somewhat severe illness, but we cannot say that the treatment has been in any way ill-adapted for you. If you will send a stamped addressed envelope we shall put you in the way of obtaining a thoroughly reliable medical opinion.

J. H. S.—We are sorry that we cannot find the reference to suppositories to which you allude. Are you sure it appeared in our columns? Premonitory symptoms of the diseases you name are respectively, fever, flushing, difficulty of swallowing, &c., and a blue line along the gums, diarrhœa, and dropping of the wrists.

Weekly Reader.—Thanks for the pamphlets, which we had seen before. They are a rich treat in their enumeration of the "aids to beauty," hair dyes, and nose-adjusters. How long will quackery like this flourish? As long as there are fools in the world, and so long as ignorance of what health means, prevails. Again, many thanks.

Lorelei.—1. Pulvermacher's Belts (194, Regent-street, London, W.) are thoroughly genuine. They produce powerful electric currents (see Mr. Lant Carpenter's descriptions of them in Health), and are in every sense effective. Most of the belts you see advertised are merely pieces of red flannel with bits of zinc or copper sewed into them. They are as thorough frauds as ever gulled the public. Give your patient the tonic recommended to "Allan Grey" in present number of Health. 2. You mean Dr. Carter Moffat's "Voice-Improver." We do not know anything of its effects, and we believe it can only be had of the inventor. We doubt if any such invention can permanently improve the voice.

[*Continued on page* 416.

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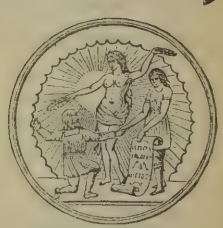

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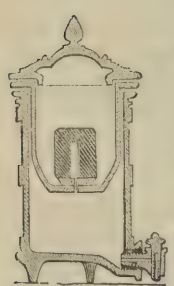

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, APRIL* 4, 1884.

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

More faith-healing and more quackery of so-called "religious" kind! A writer in the *Liverpool Daily Post* actually asks the public to believe that "cases of cancer, consumption, rheumatism, irritation in the skin (*sic*), chronic dyspepsia, spinal complaints (description or species not given), and deformities of the body (special kinds not described) have all been quickly removed through prayer of faith, the laying on of hands, and the will of God." Two letters from "faith-healed" subjects are quoted. One is from a clergyman, who says he suffered "from spinal pain and weakness for nearly thirty-three years." Now this is an utterly indefinite description of a malady. It may mean anything or nothing. Another correspondent suffered from "weak limbs," and had undergone an operation for straightening her legs. One of her legs was (so she says, at least) "four inches shorter than the other." Now, after a course of prayer and faith-healing, her legs are "equal in length, except at the heel, where there is only a difference of a quarter of an inch."

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Here we are met by a well-known and frequent case, in which probably a woman, who limped from muscular contraction and from nervous causes, became duly impressed with the notion that her leg is actually growing longer in answer to her prayers. Her "faith" enables her to do what the surgeons in the Salford Hospital, Manchester, could not persuade her to do—namely, to begin to use her limbs, and to conquer her fear of employing them freely. The result is, that by a strong mental effort she really overcomes her fears and walks. Mind triumphs over body, as in the case of the clergyman with the indefinite weak back. But to class the cure as a miracle, or to attribute it to anything else than the removal or modification of a malady which, as often as not, is of purely nervous type, is simply to relegate physiological experience to oblivion, and to revive the superstitions of the middle ages. We all know of the wonderful "cures" which may be accomplished by faith, especially in the case of nervous females. But it will require evidence of a different kind than that supplied by the correspondent of the *Daily Post* to convince sane persons that cancer and consumption, or even chronic dyspepsia, can be cured by the methods peculiar to apostolic times. Who, it might be asked, certified, *before cure*, that the cases were those of cancer, consumption, &c.? Do the Bethshans, as the "faith-healing" establishments are called, keep a certifying surgeon and physician on the premises? or are we to accept their own description of the maladies as correct? In the latter case, there would be great need for a full supply of "faith."

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In our last number we noted the discoveries of Dr. Koch relative to the "comma"-like cholera germ. Further details of interest respecting the latest news regarding the germ have since come to hand; and it may be interesting if we recapitulate these details by way of rendering our account of the discovery as complete as possible. We saw that none of these "comma"-like germs, or *bacilli*, had been detected in any bodies save those of cholera-patients; and that even in diseases somewhat resembling cholera—such as diarrhœa, dysentery, &c.—in general character these germs did not occur. The fact that the germs in question are limited to the intestine (or bowel), which, as every one knows, is the region attacked by the cholera-disease, also places the idea that they are the cause of the disease on a still firmer footing.

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It has long been known to physicians that contact with the linen worn by cholera patients has produced the disease in others. Dr. Koch relates the interesting fact that when such linen, containing the germs of cholera, has been kept moist for twenty-four hours the germs multiply at an excessive rate. The favouring effect of moisture on the cholera germs was also seen when they were allowed to grow and multiply on such a medium as moist blotting paper. Even in a moist soil they increase with fatal vigour, and it would thus seem that wet or moisture is a condition eminently favourable to the spread of the germs in question. This fact may explain why cholera is so frequently conveyed by water, and why the water supply of an infected region is always to be first suspected as the probable source of disease. In twenty-four hours a thin layer of matter, derived from the body of a cholera patient, and placed on a moist soil, was found to have been converted into a thick mass of germs.

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The above notes regarding the relation of the cholera-germ to moisture, as a condition favouring its growth, become of vast importance from the point of view which regards *disinfection* as a preventive of cholera-diffusion. It would appear as though heat and dryness are the foes of the cholera-germ; and that to disinfection by hot air or other form of drying process, we may look for safety from cholera-invasion. Dr. Koch tells us that the cholera germs die rapidly when dried. After three hours' drying they are completely destroyed; and this fact alone is the more wonderful, when we consider that some disease-germs resist drying and boiling, even when carried on for hours.

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Another fact of high practical interest, is found in Dr. Koch's statement that the bacilli will only grow in fluids which are *alkaline* in their nature. When *acids* are added to the fluid in which they are contained, their development is hindered or prevented. If these latter facts be thoroughly sound, we may expect to see an "acid" treatment of cholera tried in the East at no distant date. The prevention of cholera also becomes clear enough on the basis that sound general health is a condition through which we are able to ward off many diseases, the germs of which find no lodgment or encouragement to growth within healthy secretions. Thus in health, the secretions of the human stomach are probably acid enough to prevent any development of cholera-germs; but when digestive trouble or

general ill-health prevails, it can readily be imagined how the germs may find a suitable growing field in the disordered secretions of the digestive system.

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It is alleged that cholera has been communicated artificially, to lower animals, by inoculating them with the *bacillus* or germ. This, it will be remembered, was a feat which Dr. Koch failed to effect. Further confirmation of the success of the experiment is, however, required; but we can readily see why lower animals may resist attempts to impregnate them with the disease, when we consider that their secretions may be such as to kill the germs and thus to protect them against infection.

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We learn that H.R.H. the Prince of Wales will open the International Health Exhibition on Thursday, May 8, at 3 p.m.

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There appears to be a lively amount of misplaced ingenuity exercised in the United States over the adulteration of dairy products. A Committee of the Senate of New York has been inquiring into this matter, and has found that of 30 samples of butter examined, two-thirds were only indirectly related to the staple foundation of that article — namely, milk. Manufacturing ingenuity in America utilises the refuse fat of pigs and bullocks in butter manufacture. It cannot be enlivening for the minds of butter consumers to reflect that while refuse fat is bad enough, the "spoiled grease" to which they are also treated across the Atlantic must be many degrees worse. We also read that the "spoiled grease" in question had been treated with vitriol and other acids of sufficient strength to destroy a workman's cowhide boots. It is clear that sanitary inspection has not yet reached a high practical development in New York — provided the above facts, taken from a trustworthy source, are correct. And it is by no means comforting, in addition, to reflect that we import from America a considerable quantity of butter and cheese.

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Dover has recently suffered from an epidemic of throat disease, traceable, it appears, to an infected milk supply. The suspected dairy supplied eighty-two houses in which cases of disease occurred. Curiously enough, the dairy had a special milk supply for infants and nursery purposes, and that this supply was free from taint would appear proved by the fact that no case of disease could be traced to this source—most of the patients being above 17 years of age, and probably deriving their supply of milk from the ordinary (and infected) source. One notable point, reported upon by Dr. Robinson, of Dover, was that those persons who took cream instead of milk were seized with the disorder at an earlier date than those who drank milk. The cream would therefore appear to have contained the diseased material in more concentrated form than did the milk.

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It may be interesting to learn that the City of Paris spends annually in alcoholic liquors 575 millions of francs, equal to £23,000,000. In twelve years, it has been calculated, the Parisians have expended on wine and beer—575 milliards of francs, or £200,000,000, the amount of the war indemnity paid to Germany!

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Our next number (No. 53) begins the third volume of Health, and presents a favourable opportunity for the recommendation of the Journal by our readers to their friends.

Original Essays

"Life is not to live, but to be well."—*Martial.*

GLEANINGS FROM A CENSUS.

(*Vol. III. of the "Census of England and Wales for* 1881.")

By Percy Russell.

Although the systematic study of statistics as a science is not yet nearly two centuries old—the very term was not, I believe, invented until 1749 by Professor Achenwall, of Göttingen—few branches of knowledge have attained such precision, or achieved such extraordinary progress, as this, which is certainly destined to play the most prominent part in all matters governmental, and will no doubt in the end become the sure and solid basis of most of the sociological ideas of the not remote future. The issue of Vol. III. of the late Census (1881) accentuates these remarks, for this section of the returns, relating as it does to the occupations, conditions as to marriage, and ages and birthplaces of the people, is naturally fraught with very great interests, and even a hasty review of these elaborate tables throws very great light on the present state, and by inference on the future prospects of the nation.

First, let us take a comparative view of the period 1871-1881, with regard to the six great classes into which it is divided for Census purposes. In 1871, the total population was 22,712,266, including 11,653,332 females; the professional class numbered 684,102, including 197,984 females; the domestic class, 5,905,171, including 5,660,443 females; the commercial class, 815,424, including 57,237 females; the agricultural class, 1,657,138, including 186,696 females; the industrial class, 5,137,725, including 1,521,998 females; and, finally, the indefinite and non-productive class, 8,512,706, including 4,028,974 females. In the returns for 1881, we find that a total population of 25,974,439, including 13,334,537 females, is divided as under:—Professional, 647,075, including 196,120 females; domestic, 1,803,810, including 1,545,302 females; commercial, 980,128, including 19,467 females; agricultural, 1,383,184, including 64,840 females; industrial, 6,373,367, including 1,578,189 females; and indefinite and non-productive, 14,786,875, including 9,930,619 females. Obviously under the new enumeration a different principle has been followed in respect to the domestic and the so-called indefinite and unproductive classes; but it is noteworthy that the professional class has decreased by considerably over 30,000; the agricultural community, pure and simple, by much over a quarter of a million, and, *per contra*, the commercial and industrial classes have augmented prodigiously during the period.

Regarding the healing arts, it is of interest to contrast the two periods. According to the returns of 1871, the physicians and surgeons numbered 14,684, of whom, by the way, 433 were over the age of 75; medical assistants and students, 4,514, only 4 of these being over 75; dentists, 2,350, 12 being over 75; chemists and druggists, 19,190, no less than 128 being over 75, and 483 under that vague designation "others," no doubt a very miscellaneous fraternity. Passing to the returns relative to females for the same year, we find 494 acting as chemists and druggists, 2,215 as midwives, and 284 undefined. Reverting now to the Returns for 1881, physicians and surgeons number 15,091; dentists, 3,583; medical students, assistants, &c., 5,992; subordinate medical service, 1,972; chemists and druggists, 19,000, including, however, 631 females. Taking the female side of the accounts, we have 25 physicians and

surgeons, 64 students, 2,646 midwives, and in the subordinate medical service the large army of 35,175 members. It is evident here that except only in the instance of the chemists and druggists, there is a very great increase in the leaders as well as the rank and file of the great sanitary and hygienic forces of the nation. Under the head hospital service we note 15,796, of whom 11,526 are females.

Reference to the tables relative to the occupations of foreigners in England and Wales shows that among our physicians, surgeons, and general practitioners, there were in 1881, 3 natives of Austria, 3 of Denmark, 1 of Norway, 2 of Sweden, 7 of Russia, 3 of Poland, 1 of Hungary, 6 of Switzerland, 52 of Germany, 2 of Holland, 22 of France, 2 of Spain, 7 of Italy, 1 of Greece, and 3 of Turkey. Dentists of alien birth number 23, and of midwives there are only 5 recorded. It follows, therefore, that the foreign infusion in the great body of our hygiene workers is very slight. It should be added that the workers in surgical instruments are put down at 1,511, including 330 females. From several other points, especially as to longevity, the returns relative to ages are of deep interest and great importance. Thus it appears that in 1871 out of the total population of 22,712,266; 5,192,766 males and 5,189,687 females were under 20 years. When we come to the age of 40, the numbers are reduced respectively to 590,097 and 639,705; this diminution is, of course, accentuated throughout all the subsequent periods of 5 years each until at the proverbial three score and ten, they are found to be 149,887 and 174,086. At 90 years of age there are recorded 2,383 males and 4,338 females; and finally, at the maximum 100 years and upwards, there are 41 males and 119 females so set down. In 1881, the total population being 25,974,439, the number under 20 of males, 1,112,354; of females, 1,215,872; and at 40 the males muster 672,971, and the females 726,383. Passing to three score and ten, the numbers are respectively 158,333 and 191,622; at 80, they are 41,171 and 54,579; while the total returned as 100 years of age and upwards are 141. This against 160 centenarians with the much smaller population of the previous period is somewhat surprising. It is noticeable that of the alleged centenarians 82 belong to urban and only 59 to rural districts. I fear, however, that the tables relative to the ages of the people in those sections past the age of 40 or so, are really, as a whole, untrustworthy; and, for one thing, the statements under the figures 90, 95, and 100 and upwards have little or no scientific value. The entries are virtually unchecked, and doubtless many of those made for the very old are unknowingly exaggerated.

An important series of tables relate to the blind. In 1871, the total number thus afflicted was put at 21,590, of whom only 1,968 were blind from birth. In the returns for 1881, the number is 22,832, including 10,784 females. Of the total, 1,958 were blind from birth. The deaf and dumb numbered 13,295 (including 6,184 females), against 11,518, including 5,256 females in 1871; idiots or imbeciles are put down as 32,717 (including 16,612 females), against 29,452 in 1871; and lunatics, 51,786 (including 28,102 females), contrast with only 39,567 in 1871. I could dwell longer on these suggestive details, and there is, indeed, in these copious and highly elaborated returns rich material for the scientific student of sociology; but I have gleaned enough from a very hasty review of Vol. III. of the late Census to demonstrate the sterling value of these latest fact-contributions to the true knowledge of the condition of the people of England and Wales.

Daylight in Offices.—Chappuis' Reflectors, 69, Fleet-street, E.C. —[Advt.]

SOME COMMONPLACE ERRORS.

A WORD FOR SCHOOL-GIRLS.

By B. Dill.

At the present day, when all the world seems to have run mad after learning, or what passes muster for learning among certain people, there are too many who forget that, in storing the mind and building up the intellect, the bodily frame, which is the dwelling-place of these, must not be allowed to run to decay. Never before, perhaps, has the saying, "There is no royal road to learning," seemed so opposed to fact as at the present time. Now-a-days, children are lured forward on the steep and thorny path by tempting pictures, and games, and object-lessons. The reading-books, which a few years ago displayed only barren stretches of uninteresting prose, or scraps of jingling poetry, are now made pleasant to the eye with dainty illustrations and attractive stories. And yet, perhaps, at no other time have we heard so much of overworked brains, weakened eyes, and worn-out bodies. From every part of the country the cry comes at intervals, "Why should our school-children be so heavily tasked? What good does it do?" And while no one would venture to say that learning should not be made as wide-spread and as attractive as possible, we cannot but raise our voice to remind parents and guardians that, after all, a healthy body must be joined to a well-stored mind in order that knowledge may prove to be power.

Beginning at the very first, among the little ones who trot off daily to school, are there not many who do not receive the injunction to remove their scarves and warm wraps while in their class-rooms, and who, in consequence, are liable to catch cold on coming out into the damp or chilly air. And in too many homes, on their return, the first question asked is, "What is your place in the class?" not always followed by the equally important one, "Are your feet wet? If so, change your boots."

These are trifles, you say. Well, they may appear so; but can anything be a trifle which has to do with the health of the young, upon which so much depends in after-life? Careful training in mind and intellect is of the utmost importance, but should certainly not be the *sole* care of those who have the charge of children.

Especially to those who have the charge of motherless girls would we say a few words on the subject of general health. Perhaps only those who have experienced it can guess how such girls suffer from a strange dislike to "make a fuss," or perhaps the notion that they will not be understood; and so things that would be patent to a mother's eye, and, perhaps, told to a mother's ear, are made light of, and in many cases passed over altogether. It is surprising to find how many girls of the rising generation suffer from backache and general debility. Whether the race is deteriorating, as our grandmothers would have us believe, it does not come within our province to discuss; but there can be little doubt that want of careful training must, in a great measure, be blamed for much suffering.

Delicate girls are allowed to pore over books of small

Scott's Midlothian Oat-Flour.—Messrs. Scott, of 82, York-street, Glasgow, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

print until their eyes are dazzled and their brains benumbed. They are often compelled to sit upon forms without any support, bending forwards to write or read for hours together, until their backs are stiff and their heads ache. Only the very strong can stand it, and even in their case sometimes nature takes her revenge and refuses any longer to be outraged.

Not long ago a physician, examining a school of between twenty and thirty girls, found among that number only *one* whose spine was perfectly straight, and whose figure had grown without deformity of any kind. Surely this was never meant to be! In many, of course, the deformity is so slight as hardly to be noticed; but if children are born straight and well made, it must indeed be worse than careless to let them grow crooked through mere neglect or ignorance.

In most private school-rooms happily, there is a reclining-board, on which the pupils may lie when they feel tired of sitting up. Lounging, however, should never be allowed. Let the pupils stand and sit at intervals; change of position often gives ease, and thus sharpens the intellect which would otherwise become tired and dull. We would also recommend that young people should be permitted to *relax* both minds and bodies, for ten minutes, say every two hours. The time will not be lost if it helps them to return to their work with renewed vigour. In the case of daily scholars who return home in the afternoon, they should be encouraged to take healthy exercise (such as walking, rowing, tennis, &c., and gymnastic exercises, or even dancing, when these are not to be had) for an hour or two before they turn to the preparation of the next day's lessons. Even in these they should not be permitted to tire themselves, but a kind and careful supervision be kept over the young people, without giving them the hampered feeling of being watched. It would hardly be kind to press a girl, who is already tired out with the day's work, to exert herself, by rule, in games, &c., when a little judgment will show that she would feel far more refreshed by being advised to lie on her back for an hour on the sofa, to rest both body and mind. It is perhaps a matter of regret that things are so arranged as to render it necessary to fill the mind while the body is growing, but it only makes it more urgent that the one should not be neglected for the sake of the other.

In these days of competitive examination, when nothing can be had but through this medium, it would be foolish as well as useless to say, "It is unwise to encourage such things," but every one may be warned of the danger of over-taxing both mind and body, and thus for ever destroying the chances they are meant most to advance. Many of us must have instances in our minds of young people who have suffered from the effects of such a strain. But one example may not be out of place. A young girl who had the prospect of making her way in the world, resolved to pass the highest examinations at one of our great seats of learning. With the thought of the benefit which would accrue therefrom, she studied day after day, often taking from the night some of the hours which should have been spent in sleep. She was strong and well at first; no one warned her of danger, and she herself never thought of it. But when the examinations were over, feeling strangely tired, she asked leave to remain in bed for a day or two, "to get thoroughly rested," she said. Permission was readily given, but she never felt *rested* enough to rise again, and before the news that she had *passed* successfully could reach her, she died—worn out. This is, perhaps, an exceptional case; let us hope, at least, it is a rare one; but surely, if by proper attention to the laws of health and the demands of nature even one bright young life may be spared, the matter is worth thinking of, and cannot be too gravely discussed.

It is rather to be regretted that no one has hit upon the idea (now, when female colleges are the fashion) of opening a school for training women in the duties of mothers. Too many young girls at the present day marry early, without much thought of the responsibilities they incur. A vast number of them are too selfish to think of their children's health and happiness before their own pleasure. They love them, certainly, and wish to see them grow up well-educated and well-behaved; but they have so little idea of what is meant by *training* children, that many of the latter might just as well be without mothers. True, there are some beautiful exceptions, where the remembrance of a mother's wise and loving guardianship follows her children to their lives' end, and in the words of the wise writer, they "rise up and call her blessed." But those who observe such things must acknowledge that the spirit of the age is rather to ignore the sacred ties which bind mothers to their children and which induce children to honour their mothers before all the rest of the world.

Before closing, we would say a few words on the importance which should be placed on the fact that growing children and young people require more sleep than their elders; and should be compelled to keep regular hours for retiring to bed and getting up in the morning. Some constitutions require more sleep than others. But up to the age of sixteen, no young person should be out of bed after ten o'clock. Every one knows the saying that the "beauty-sleep" is that which comes before midnight. If seven o'clock is the hour for rising, the young people should retire at nine, or half-past nine; the very little ones, of course, being carried off not later than seven. We do not greatly advocate the practice of doing much exercise, either in the way of brain-work or bodily exertion *before* breakfast. The theory that it gives an appetite, is in all cases a mistake. In girls, especially, it rather engenders faintness and a dislike to eat the food when it comes. If early-rising is the fashion in a household, things should be so arranged that breakfast should also be served at an early hour. When this would inconvenience the other members of the family, the early-risers might have a cup of coffee or a glass of milk, and a slice of bread and butter before going to work; better still a plate of porridge and milk, which would support them at the time, and yet nor interfere with a substantial breakfast at a later hour. For certainly we gain an appetite while sleeping, and in every healthy person the body is already in a condition to be replenished by food as soon as possible after waking. Then let the fresh morning air be enjoyed, and there is no doubt that the benefit will be great.

Finally, let us remember that as a fair garden may become over-run and choked with weeds until it resembles a desolate wilderness, so the small seeds of carelessness and folly growing up may destroy the fragrant but delicate flower of health; until the human body, which is distinctly meant to be a "thing of beauty," shall gradually become an abode of pain and weariness to the miserable spirit that is compelled to dwell therein.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London W.C., who will return particulars post free.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

THE MORNING BATH.

By William White, F.S.A.

The necessity for the daily bath, and the mode of taking it, has been often discussed in the pages of Health. A little personal experience may be of still further service to those who, like myself, have but limited means of supplying the water for a number of daily baths. The great majority of persons cannot have more than a common hip- or sponge-bath; and in a large family the supply of water, in carrying and emptying, becomes a serious consideration. The mode which I have now for some years adopted can hardly be excelled. It is briefly explained in my little "Knapsack Handbook" (E. Stanford, Charing-cross).

Much is made, and very rightly so, of the value of the "cold" bath, for summer and winter, for those who can well endure it. For many years, I diligently and conscientiously satisfied myself that I could well endure it; and, till its use was summarily forbidden, I did endure it, in spite of blanched finger-ends, tinged with blue, and other signs of defective circulation. I am now able to continue it, however, winter and summer, without any of its ill effects, simply by the mode of operation. First soap and wash and sponge yourself with hot water, and then sluice yourself with the cold. In neither case ought the water to be put out into the bath, but into a basin beside it. Thus the whole of the water taken up by the sponge, which should not be over-large, is fresh and clean, and hot or cold as the case may be—instead of its becoming merely tepid by repeated use from the bath. The most is made of every drop of the water, and a small quantity, with discretion, can be made much more available than a larger quantity for the purposes required; and the hot and the cold can be freely used into the one bath without the least difficulty. Thorough drying with a coarse towel will give the needful amount of friction, after which a good rub with a square of flannel completes the process.

During a walking excursion, a similar bath, on coming in at the end of the day's work, is a luxury and a benefit which only those who have experienced it can truly appreciate. Before coming off a glacier I did once take a "dip" in the clear stream running through its white crystal channel of ice. But, although on that occasion I was much refreshed by it, and suffered no ill effects, it was an experiment which would not bear too often repeating. On another occasion I suffered severely from taking only a tepid bath after a long walk, without first charging my system with the requisite amount of caloric, which the preparatory hot water imparts.

Whilst living in London, the greater discoloration of the hot water, in its use, is quite enough to explain, and to justify, this mode of applying it, to say nothing of the invigoration of the process. Those who are blessed with a very free circulation may, perhaps, "well endure" the cold water alone. But experience and observation alike show that error may lurk undetected in its unmitigated use.

After a walk, before getting cool, I often take a dip in a stream or cold bath, and can do so with pleasure and with impunity; but I maintain that a little hot water first is safer, and commonly more invigorating.

DANGERS FROM FLIES.

"E. P. W.," in a communication to *Nature*, says:—"In a note communicated to the *Gazzetta degli Ospitali* for August, 1883, and republished in the current number of the *Archives Italiennes de Biologie* (tome iv. fasc. ii.), Dr. B. Grassi calls attention to the fact that flies are winged agents in the diffusion of infectious maladies, epidemics, and even parasitic diseases. During the summer season, when flies occur in swarms, it seems impossible to prevent them from settling on any and every object. In these countries, though sometimes troublesome, they are scarcely ever so numerous as in the warmer climates of the Continent, and even in these latter they are not often to be found such plagues as they are in Egypt; but in all these countries alike they may be seen to alight on all moist substances without distinction. It may be the expectorations of a consumptive or the ejecta of a typhoid patient that have last attracted the inquiring flies; but, irrespective of the material they may have been investigating, their next visit may be to the moist lips or eyes of a human being. Their feet, their mouth, and the chest portion of their bodies will have all come in contact with the infective mass, and will all in turn be more or less cleansed of it by the moisture of the freshly-visited mucous membranes. But this danger has already been known and recognised, and it seems scarcely doubtful that in Egypt ophthalmia (or eye-inflammation) is constantly carried to the eyes of the infant natives by such winged visitors.

"Dr. Grassi calls our attention to even greater danger, and this from the ejecta or excretions of the flies themselves. Every housekeeper knows how the bright surface of a mirror or the gilt moulding of a picture-frame can be covered over with the little flects left by these flies,—no English words occur to us to translate therewith the phrase 'les méfaits des mouches.' The following experiences of Dr. Grassi relate to these:—At Rovellasca, between his laboratory, which is on a first floor, and his kitchen, which is on the ground-floor, there lies a courtyard, with a distance between the windows of the two rooms of about ten mètres (equal to about 33 feet). On a plate on the table of his laboratory he placed a large number of the eggs of a human parasite (Trichocephalus). After a few hours, he found, on some white sheets of paper hanging in the kitchen, the well-known spots produced by the excreta of the flies, and, on a microscopical examination of these spots, several eggs of the parasite were found in them. Some flies coming into the kitchen were now caught, and their digestive system was found quite filled with an enormous mass of matter, in which the presence of eggs of Trichocephali were detected. As it was practically impossible to keep all alimentary substances from contact with these flies, it follows that the chances of Dr. Grassi and his family being infected with Tricocephali were very great. As a matter of fact, the experiment was tried with undeveloped eggs of this worm.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

"Another experiment was in the same direction. Dr. Grassi took the ripe segments of a *Tænia solium*, or common tapeworm (which had been in spirits of wine), and broke them up in water, so that a great number of the tapeworm's eggs remained suspended in the fluid. The flies came to the mixture, attracted by the sugar, and in about half an hour the ova of the tapeworms were to be found in their intestines and in the spots. Had these eggs been in a recent and living state, they would doubtless have been just as easily transported. To those who care to try these experiments, it is suggested that lycopod (or club-moss) powder mixed with sugar and water is a good material, as lycopod spores (or germs), are easily detected.

"It is self-evident that if the mouth-apparatus of the fly will admit of the introduction of such objects as have been above noted, that there will be no difficulty in its admitting scores of the spores of many parasitic fungi, and above all of those belonging to the Schizomycetes, the possible cause of so much disease. Already has Dr. Grassi detected in fly excrement the spores of *Oidium lactis*, and the spores of a Botrytis, this latter taken from the bodies of silkworms dead of *muscardine*.

"There arises, of course, the question of how far the active digestion in the intestines of the flies may not destroy the vitality of germs or spores thus taken in, but it would seem probable that in many instances the larger bodies swallowed may not serve as objects for assimilation, but may be got rid of as foreign bodies: and it will be borne in mind that the flies themselves fall victims to the growth of a parasitic fungus (*Empusa muscæ*, Cohn), which is probably taken first into their own stomachs.

"Dr. Grassi promises to publish the results of his experiments in fuller detail. Judging of their interest by this abstract, they will well deserve to be followed up, and though in these countries our modern sanitary arrangements do not tend to the development of such immense swarms of flies as are so constantly to be met with in Italy, still the dangers to be apprehended from them there are possibly, though in a less degree, to be encountered here, and the investigation of the fact is easy to any one possessing a fairly average microscope and the power of catching a fly."

It is recommended by Dr. Tyson, of Philadelphia, to add molasses to mustard in making the mustard plaster, which, he says, furnishes a mild, persistent, counter-irritant, that can be kept on for hours.

Nettle-rash, or Urticaria.—This is a nervous affection of the skin in which blotches resembling those of the nettle-sting appear upon the surface, accompanied by itching and burning sensations. Disturbance of digestion is the usual cause. For immediate relief, bathe the parts with a solution of soda or saleratus, a teaspoonful to the pint of hot water. Simple sponging with hot water, or hot salt and water, a tablespoonful to the quart, is in some cases still more effective. The exciting cause must be removed to effect a permanent cure.

Glass Floors.—There has recently been developed in Paris an idea for the use of glass, instead of boards, as flooring. The whole of the ground-floor of the head-quarters of the Crédit Lyonnais, on the Boulevard des Italiens, has been paved with large squares of glass, about 18 in. square by 1½ in. thick, embedded in iron framework, and a similar floor has been laid in the centre hall of the offices of the Comptoir d'Escompte. The glass is of a bluish tinge, but this is said to be agreeable, rather than otherwise, to the clerks who work beneath it, and who can transact their business, even on dull days, without the aid of gas.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

ECONOMICAL BREAKFASTS, DINNERS, AND SUPPERS.

By Mrs. Thwaites, of Liverpool.

FIFTH PAPER.

Breakfasts.—Before treating of the countless breakfast dishes that can be made from vegetables, eggs, fish, and meat, it will be well to touch upon what is, perhaps, the most important article of our whole dietary—bread. It holds pretty nearly the same position in all civilised countries. Seeing that it is eaten by everybody, but in much greater quantities by the young than the old, it becomes a matter of vital interest that it should be as good as it is possible to make it. Wherever practicable, bread should be made at home. There is no process in the whole range of cookery more interesting than this, and none where intelligent and scientific knowledge will be more advantageous. When bread is made at home, individual tastes can be suited and purity of material guaranteed, to say nothing of the greater degree of cleanliness insured.

To be digestible bread must be light—that is, porous and spongy; nothing tries the digestive organs more than heavy bread. This lightness is usually obtained by fermentation, for which yeast is used. It matters little whether it be brewers' or what is known as German yeast. In towns, the latter is used to the almost entire exclusion of the former. The proportion of good fresh yeast will be about as follows:—3 lb. flour require 1 oz., 7 lb. 1½ oz., 14 lb. 2 oz.

Yeast is a collection of very minute fungoid plants which grow rapidly under favourable conditions; but it must be distinctly understood that any deviation from these conditions kills the plants, and consequently spoils the bread that is being made. The following directions will always insure success, even to the veriest novice:—

Crumble the yeast lightly into a basin or cup; add a teaspoonful of flour and the same of sugar, then mix slightly with a ¼ pint of lukewarm water; set in a moderately warm place for about ten minutes. Meanwhile, prepare the flour, putting it into a large earthenware pan, and allowing 1 teaspoonful of salt to every pound of flour; the salt must be fine, and requires well mixing with the flour which, in cold weather, should be allowed to stand a few hours in a warm kitchen. A large jug of lukewarm water (about 60° Fahr.) should be at hand. As flour varies considerably in quality, it is impossible to state exactly the quantity of water required, a pint or a little less to 1½ lb. being something like a usual proportion. By this time, a change will be noticed in the appearance of the yeast; it will be covered with innumerable small air bubbles, and will have risen high in the basin. Make a hole in the middle of the flour, pour in the yeast, add a portion of the water, and then stir with a large wooden spoon; continue to add water until all the flour is soaked. Sprinkle well with dry flour and knead until the dough is smooth and elastic; on being pressed down with the finger it should come up again quickly. Leave it to rise for 2½ hours, where it will be moderately warm and not exposed to draughts; it should rise to about three times its original size. Turn it out on a floured board, divide into portions of the desired size, knead each one

lightly, put into greased tins, set before the fire for ten minutes, and then put into a hot oven; in about twenty minutes the heat may be reduced. A 2 lb. loaf will take three-quarters of an hour; when taken from the oven the loaves should be turned out on a sieve, or set on edge until cold; this is to prevent the bread being spoiled by the condensation of the steam.

The temperature throughout is of the highest importance. If it rises above about 80° Fahr., the yeast plant is killed and the bread would be entirely spoiled; if, on the other hand, it sinks below 45°, it is rendered torpid and the whole work is very much retarded. Sugar in solution, to a small extent, is necessary, and although a very small quantity is present in all yeast, it is much safer in the making of bread to add a little. The question of fermented versus unfermented bread has often been raised, but the use of the fermented kind does not appear to have been affected thereby. Provided that good materials are used, and the fermentation be not carried on too far, it is not likely that fermented bread will ever be displaced by that which is unfermented.

Pleasant changes may be made by substituting brown flour for white, adding Indian corn meal, rye flour, and so on. The best brown flour for general use is that known as decorticated whole meal; it is very strongly recommended by the Bread Reform League. Other kinds are often irritating, and cannot be given in the form of bread to young children, a very little causing diarrhœa, while that made from the decorticated wheat may be eaten with perfect safety by quite young children. In making brown bread, a few slight differences must be observed. It is always well to add to the flour a little fat—½ oz. butter or lard to the pound of flour—rubbing it well in, and a little larger proportion of yeast; it is well also to allow the dough to be a little softer than in ordinary white bread. When made at home, it is best to make small loaves, which should be very thoroughly baked.

For Indian corn bread, take one-third of Indian meal and two-thirds of wheaten flour; the meal must be put into a good sized bowl and be scalded; that is, as much milk or water actually boiling must be poured over as it will take up, it must be vigorously stirred, and when slightly cooled the flour must be mixed into it; a little larger proportion of salt will be required for this; the way of mixing in the yeast and letting it rise will be exactly the same as before.

Rye or barley meal may be mixed in equal quantities with flour, and made into bread as above. The last two kinds should be made up into little cobs and baked on the oven shelf.

Dinner.—*Baked Fish.*—Baking is an economical mode of cooking; nothing is lost, as in boiling, and great variety of seasoning can be employed, which gives change. Grease a tin well with butter, make a mixture of crumbs, chopped parsley, salt, pepper, and a very small quantity of sweet herbs; spread a portion of this over the tin, then the fish, which may be any kind that is plentiful. *Flat* fish should have the dark skin removed, the head and tail cut off; larger fish, like cod, should be cut in slices an inch thick; haddock or mackerel should be split open, and have the backbone removed; it must be thoroughly, but *quickly*, washed in cold water, and after that dried. A layer of the seasoning mixture must be spread over the top of the fish, a little water or fish-stock poured over, and finally a few little bits of butter put on. Set into a moderate oven, time from half to three-quarters of an hour, the juice of half a lemon or a little vinegar added to the gravy when the fish is taken up will be a great improvement. Serve with plainly-boiled potatoes.

Queensland Pudding.—Grate three potatoes and a good-sized red carrot, add a pinch of salt, 3 oz. of finely-chopped suet, 4 oz. of brown sugar, and one egg; beat all well together, grease a pudding-mould, and a piece of kitchen paper large enough to cover the top of the mould; now mix 6 oz. flour thoroughly with a good teaspoonful of baking-powder, stir it quickly into the mixture and put at once into the mould, cover with paper and set into a pan of boiling water. The water should reach about half-way up the mould, and will need renewing occasionally. Time to boil, 2½ hours. Stoned raisins may be put into this pudding, if liked; serve with plain melted-butter.

Supper.—*Cheese Toast.*—1 slice of stale bread toasted; put into a small pan ½ oz. butter and ½ oz. flour, stir together over a gentle heat; add ¼ pint of milk, and continue to stir until it boils; take it off the fire, and season with pepper and a small pinch each of cayenne and nutmeg; salt at discretion, as the saltness of cheese varies. Stir 2 oz. of grated cheese in, heat thoroughly, and spread on the toast. The appearance of the dish will be much improved if it can be quickly browned, as under a reflected gas jet. A great many people like cheese, but find it indigestible. If this dish is carefully prepared it should not disagree with any one.

The temperature at which fat becomes hard is a fairly trustworthy guide to its digestibility. Thus beef and mutton suet go hard soon; bacon-dripping is still soft when these are quite hard. The digestibility of the fluid fat of bacon is well known. Butter, too, is soft in cold weather, only the caseine remaining in it makes it hard. The best cod-liver oils are all frozen to a low temperature to remove all stearine and palmitine; and so are still more easily digestible than oils not so treated.

The Americans have discovered a mode of aging wine by electricity. A company undertakes the ripening and purifying of wine and other alcoholic liquors by means of an electric current. It has for a long time been possible to disguise the fusel oil in new wine and other liquors by ingenious flavouring, but the electric process, if we are to believe the inventor, completely eliminates all the essential oils, and renders the liquor not merely as agreeable to the palate, but also as wholesome as if it had been kept for years. Light clarets are "aged" in from three to six hours, and brandy in sixty.

Recipes for Barley Water.—Having first washed two ounces of pearl barley, put it into a saucepan with two quarts of water. Boil for two hours or more until the barley is quite soft, stirring and skimming occasionally, Strain through muslin and sweeten to taste. If allowable, a little lemon-juice may be added, which makes it to most patients a more agreeable drink. Another recipe is:—Wash two ounces of fine pearl barley, boil it for five minutes in a pint of water, strain, put the barley into a jug, pour over it a quart of boiling water, cover it close with a cloth, let it stand until cold, then stir it up, strain, and keep ready for use.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, N.W.—[Advt.]

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

CALISTHENICS, OR LESSONS IN PHYSICAL EDUCATION.

By H. C. Standage.

EIGHTH PAPER.—WAND AND RING EXERCISES—(*Continued*).

"Now, the object of the lessons I have already given, and those immediately to follow, are devised for the express purpose of strengthening and expanding to its normal proportions the chest of each one of you."

"Do not think me stupid, but I daresay Maud and Ethel, as well as myself, would like to know all the benefits we are to derive from this increased lung-power and normally-developed chest."

"Certainly, Anne. I'm glad you ask that question, for it shows that my speech has not been mere words to you. In the first place, by having the lungs developed to the full extent, they are able to deaërate a greater quantity of the breath inhaled, and, as a consequence, the blood is rendered purer than when only a small quantity of inspired air is deaërated. In the second place, you are able to endure a greater amount of fatigue—as running, swimming, or even going up and down stairs—without feeling exhausted or your breath coming short and quick. One of the results of exercise is that you breathe regularly and in a normal manner without getting flurried or 'losing breath,' should you suddenly take to running—as in escaping from a sudden shower of rain, &c.—or any other unexpected exertion. In the third place, by having lungs fully developed, in a perfectly healthy condition, and the blood pure thereby, you are less liable to take, and better able to throw off, disease. Moreover, æsthetically you are beautiful in the outline of your chest, because it is naturally developed. An undeveloped person, if not ugly, is certainly not beautiful."

"How is it, Charles, exercise produces a developed chest? Why, if by standing upright and simply breathing fully into my chest, I can inflate it thoroughly and throw it forward, why do I need exercise to do the same thing?"

"For this reason: The more you breathe into your chest, the more developed it becomes, and the effect of continued exercise is to finally fix the bones and cartilages in the position they should normally occupy. If you sit still you inhale only a small quantity of air, and expelling less, there is a residuum left in the lungs that, if not now and again expelled by a deep breath or exercise or exertion of some kind, becomes stagnant and impure. Now, after taking in a long, deep breath and puffing out your chest, you notice that the bones sink back again; whereas the effect of systematic exercise like that I am putting you through is to permanently retain the bones of the thorax in the position that will give the greatest space for the lungs. At the same time, by performing exercise the breath comes quicker than when you are simply standing still, and as a result the blood becomes purified by this increased circulation, and, lastly, by graduated exercise the mechanism of the heart is regulated to bear the shock of sudden activity or momentary cessation of activity without its being thrown out of gear—if I may borrow a term from mechanics."

"Thank you, Charles. Shall we resume our exercises now?"

"If you please. There are a few more with the wand and one or two with the rings, I should like to put you through in this lesson."

Exercise 7.—"To make right and left limbs perfect, I will ask you to repeat the previous movements, holding the wand in the left hand, and stepping forward with the left leg. This movement of stepping out or "charging" will enable you to perfect your balance and give freedom to the hips.

Exercise 8.—"Hold the wand as far in front of you as you can with the right hand, left hand on the hip; step out to the wand with the right leg, then back to the first position; and lastly take a step backward with the right leg, keeping the wand on the same spot. Repeat these movements six times, and then do them with the left foot.

Exercise 9.—"The last exercise I shall give you with the wand is one that will give you still greater freedom of movement of the joints of the lower limbs.

"Hold the wand forward in front with both hands, step up to it with the right foot, and then take a step backwards with the left leg. While in this position, at a single jump, change the position of the feet, so that the left one is near the wand and the right foot carried behind. Reverse the position of the feet half-a-dozen times successively. As a variation to this exercise, hold out a wand in each hand, so that they are in line with the body—that is, the wand in the right hand pointing to the right and the left one to the left—and repeat the former movement with the legs while the arms are thus extended."

The special instrument needed for this exercise is a ring of wood, one inch thick and six inches in diameter. This ring is grasped by two persons.

Exercise 10.—"Now, girls, I want you to pair yourselves according to height, and each pair take two rings. You see I have provided myself with them. Now you are paired off, each pair face each other, your right feet touching at the toes, the left leg carried fourteen inches to the rear and ten inches to the left front; the toe of this foot points to the left, while that of the right foot points to the front. With the left hand on the hip, take one ring and both grasp it by the right hand. Now commence alternately pulling and pushing each other. Don't shift the feet off the ground, but let all movements of the body, as you are dragged forward and pushed backward, be made on the hip joints and knees. Alternately push and pull six times, then swing the ring in a semicircle from side to side, raising the arm as high as possible, and not bending the elbow. Repeat these movements with the left feet to the front, and the ring in the left hands.

Exercise 11. "Next take a ring in each hand, the feet as before, one pointing to the front, and the other carried off to the side; then alternately push and pull; likewise raise one arm and lower the other to their full extent; then swing them in a semicircle from side to side; next raise one arm and depress the other, both of you pushing against each other. In this movement the ring will form the apex of a triangle, the arms forming the sides. You notice that in this exercise with two rings that the right arm is opposed to the left of each performer. There are many other movements to be done with these rings which I need not specify now; but I have taught you the above so as to render your shoulder-joints supple and firm, to strengthen the muscles of the waist, and to render you free, easy, and graceful in moving the upper part of your body—commonly known as the trunk—without at the same time moving the lower limbs. In the next lesson I shall give you exercises that will strengthen the muscles of the arms and back by stating directions for the use of the dumb-bells."

(*To be continued.*)

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sidney.*

Injurious Effects of Baking-Powders.—A writer in the *Journal of the American Medical Association* avers that there is no doubt that baking-powders, even the best of them, are damaging to health. He says:—"To make the matter clear, it may be stated that the average baking-powder is composed of bicarbonate of soda, cream tartar, and starch, with a possible admixture of other things. The continued use of even this purest baking-powder will affect the system seriously, commencing with only a slight derangement of the digestive organs, which gradually becomes chronic, changing the secretions of the stomach necessary for digestion (muriatic acid); in fact, altering the whole chemistry of the human stomach. The continued use of alkalies in any form injures the health. Look at the alkali country west of us, where the alkali is found in the *drinking water*. The same dangers will arise from the persistent alkaline medication of our *daily bread*. The various forms of dyspepsia, bladder troubles, Bright's disease, consumption—the newest researches speak about a wrong proportion of the alkalies in this disease—are only too often caused by this modern substitute for the old, time-honoured, common-sense practice of using yeast."

How to Select Flour.—In selecting flour, first look to the colour. If it is white with a yellowish straw-colour tint, buy it. If it is white with a bluish cast or with black specks in it, refuse it. Next examine its adhesiveness—wet and knead a little of it between your fingers; if it works soft and slicky it is poor. Then throw a little lump of dried flour against a smooth surface: if it falls like powder, it is bad. Lastly, squeeze some of the flour tightly in your hand; if it retains the shape given by the pressure, that, too, is a bad sign. It is easy to buy flour that will stand all these tests. These modes are given by all old flour dealers, and they pertain to a matter that concerns everybody.

New Milk.—The *Confectioners' Journal* says that an aqueous solution of glucose has come into use as a new adulterant of milk. It retains the density of the watered milk and imparts sweetness; the cow is allowed to swish her tail through it a few times to give it the requisite "cowy" flavour, after which it looks like milk, tastes like milk, and is milk; and the corner groceryman is prepared to take his affidavit to go with every quart.

Morfit's Hair Tonic.—One half ounce of vinegar of cantharides is mixed with one ounce each of cologne and rose-water; or one half ounce tincture of cantharides is mixed with two ounces of cologne-water, one half drachm oil of nutmeg, and ten drops of oil of lavender. If too strong, dilute with cologne water.—*Weekly Drug News.*

Sweating Feet.—M. Vieusse, principal medical officer of the Medical Hospital at Oran, states that excessive sweating of the feet, under whatever form it appears, can be quickly cured by carefully-conducted friction with the subnitrate of bismuth, and even in the few cases where this suppresses the abundant sweating only temporarily, it still removes the severe pain and the fetidity which often accompany the secretion. Dr. Vieusse has never found any ill consequence to follow the suppression of the sweating.

Heredity in Nervous Diseases.—Dr. Möbius, of Leipzig, has investigated the genealogies of five families through several generations, in order to obtain some information with regard to the mode of heredity in nervous diseases (*Deutsche Med. Wochensch.*, Nov. 7). He finds, among other things, that drunkenness exerts a most powerful influence on posterity, and that even the apparently healthy members of a nervous family are not normally vigorous and capable of enjoying life. He is of opinion that no one who has once suffered from a severe form of nervous degeneration ought ever to marry.

New Method of Tooth-Drawing.—In the *British Medical Journal*, December, 1883, p. 1142, attention is drawn to a new method of tooth-drawing practised by a dentist of Geneva. A small square of india-rubber, pierced with a central hole, is pushed over the tooth till the upper part of the root is reached. The india-rubber gradually contracts, pulls on the root, and the offending tooth is finally enucleated without causing the patient any pain whatever.

Limbs of Unequal Length.—A writer in *Nature*, a member of the Royal College of Surgeons, mentions that, of seventy well-authenticated skeletons he examined, the lower limbs were equal in length in only seven instances, the right limb being longer in twenty-five, and the left limb in thirty-eight cases. It is claimed that this will have the effect, where persons walk without knowing the direction from their surroundings, to make their step longer with one limb than the other, and thus travel in a circle, as people so frequently do when they get lost. In most of the skeletons above referred to, the right arm was longer than the left.

Potato Pancakes make a most excellent dish for supper. Serve with the same embellishments in the way of pickles, sauces, as you would do were the dish you were offering fried oysters. Grate a dozen medium-sized potatoes, after peeling them and washing thoroughly. Add the yolks of three eggs, a heaping tablespoonful of flour, and if they seem too dry a little milk will do to thin them, with a large teaspoonful of salt, and lastly the whites of the three eggs beaten stiff, and thoroughly beaten in with the potatoes. Heat your griddle and put butter and lard in equal proportions on it, and fry the cakes in it until they are brown. Make them a third larger than the ordinary size of the pancakes.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

International Health Exhibition, London.—The Exhibition will be opened by the President, his Royal Highness the Prince of Wales, on Thursday, May 8, at 3 p.m.

Plant Therapeutics.—M. Villermoz, a celebrated horticulturist, recommends the watering of diseased plants with warm water, after having previously turned up the earth, without touching the roots. The water that escapes from the bottom of the flower-pot is at first clear, but it afterwards becomes lightly brown and yields an acid reaction, to which M. Villermoz attributes the diseased condition of plants, the hot water acting, not only as a stimulant, but possessing the power of eliminating the acid substances with which the soil becomes impregnated. By this treatment M. Villermoz has seen almost completely withered plants restored to life in a short time, and he thinks that the same may be applied to plants in the open air.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Medical Fashions in the Nineteenth Century, including a Sketch of Bacterio-mania and the Battle of the Bacilli. By Edward T. Tibbits, M.D. Lond., &c. (London: H. K. Lewis. 1884.)

In the introduction to this brochure Dr. Tibbits confesses that his views regarding the subjects on which he writes "are not, medically speaking, quite orthodox, in fact, they are not fashionable." May we, without fear of being considered disrespectful or frivolous, venture to suggest that the Doctor is a little old-fashioned? Nevertheless, we like neither him nor his book the worse for being so. His views, if not quite orthodox, have a certain amount of charm, and those who are not committed to any particular dogma will readily admit that his arguments in favour of them are forcibly and clearly put. His opinions are stated in two propositions which no one, we think, will venture to dispute. It is when we come to the illustrations in support of these propositions that we find ourselves on debatable ground, and it is here, also, that the Doctor is at variance with much of the current thought, or perhaps we should say "fashions," of the day. The first of these propositions he gives in the following terms:—"Many valuable remedies and methods of treating disease, by reason of their too general and injudicious use, have a tendency to become, and sometimes do become, highly dangerous, or even positively destructive to human life, and are liable to be wholly discarded, or greatly undervalued in consequence."

In support of this statement he instances bleeding, mercury, the system of large doses, its converse or homœopathy, hydropathy, mesmerism, metallo-therapy and massage, alcohol, anæsthetics, chloral, digitalis or foxglove, mineral waters, and health-resorts. The majority of these illustrations are apt and to the point. Others we regard as unfortunate. For example, we doubt if the large dosage system, homœopathy, and metallo-therapy were ever under any circumstances "valuable methods of treating disease." Nowhere in Dr. Tibbits' remarks do we find them regarded as such. They are excellent illustrations of absurdities in medical fashions, but not of valuable methods, discarded or undervalued because of their injudicious use. The large dosage system was much in vogue in the early part of the present century. It sounds somewhat alarming to-day to hear that patients were then expected to swallow about half-a-pound of iron carbonate in twenty-four hours, that three drachms of calomel have been given in one dose, and that, still later in the century, our American brethren have taken, apparently without a murmur of dissent or protest, eighty grains of quinine in a single draught. Such treatment can hardly be recommended as suitable even in specially-selected cases. Giants may have existed in those days, as Dr. Tibbits suggests, but the giants who were able to withstand such gigantic doses must have been few indeed. The system was so absurd that there is small wonder that many disgusted ones rushed to the opposite extreme and adopted the absurd doctrine of Hahnemann, with his decillionth of a third of a drop and *materia medica* of ugly nomenclature.

There are few, if indeed any, physicians of the present day who believe in the two great fundamental principles of the founder of Homœopathy, that like cures like (*similia similibus curantur*), or that medicinal substances are efficacious only after having been reduced to a wonderful degree of minuteness or dilution. It is, indeed, doubtful whether a true homœopath exists. Not a few of the so-called homœopaths are such in name only, in order that they may attract those patients who desire a novelty or something out of the common. The battles around Metallo-Therapy, or the external application of metals in certain nervous diseases, may be regarded as over. The only form of metallo-therapy which the medical profession is likely to believe in, is that in which the patient lines well the physician's palm with some of the current coin of the realm—and it would not be amiss if some patients paid a little attention to the more frequent application of this remedy. Bleeding, which was once so common, has now fallen into almost total disuse. In our own experience we can only remember two instances of patients having been bled from the arm. There is no doubt that this total neglect of a valuable remedy is to be regretted, but it is better that it should not be resuscitated than that it should be abused in the indiscriminate fashion of old.

It is not so very long ago since mercury, more particularly in the form of calomel, like bleeding, was almost universally employed. Such reckless administration of a valuable medicine led to its disuse. Its want has, however, been felt, and it is now once more restored to its proper place in the pharmacopœia, in spite of the substitution of so-called "vegetable mercuries." Let us trust that it will retain its proper place, and continue to be used with the caution which characterises its application at the present day. Hydropathy and mesmerism are now looked upon as fashions of a bygone period; but hydropathy, in its simpler form at least, must always be regarded as a good therapeutic agent in a certain class of cases. The same cannot be said for mesmerism. Alcohol, anæsthetics, and chloral are drugs which, from their very nature, are (and probably will be, so long as human nature is what it is) liable to abuse. It will be an evil day for therapeutics if this abuse should ever (but we can hardly imagine it) lead to their being dropped from the pharmacopœia.

Digitalis or Foxglove is one of those drugs about which there has been and still is much controversy. In the early part of the century it was considered curative of consumption and a specific in lung inflammation. Since the invention of Marey's sphygmograph it has been classed as a stimulant along with alcohol, ether, ammonia, and the like. Not a few of our older and more experienced physicians, and among them Dr. Tibbits, declaim against this arrangement, holding it to be sedative and depressant. Regarding mineral waters and health-resorts, the doctor is a little too severe. He is cruel enough to say, regarding the waters, that "it is highly probable that in the majority of cases a little sulphate of magnesia or soda given at the proper time and in suitable doses would answer as well as the most fashionable medicinal spring in the world." Evidently he has little faith in the therapeutic powers of the imagination. As to the health-resorts, his quarrel is not so much with them as with the fashion which extols the more-recently discovered at the expense of the older and more familiar places. For our own part, we do not object to this laudation of "fresh fields and pastures new." The weak point which deserves criticism is the indiscriminate banishment of all sorts of cases to such resorts as soon as they become fashionable. Davos Platz being the fashion at present, comes off rather hardly at the Doctor's hands. He is much exercised at an advertisement which appears frequently in the medical journals:—"Davos Platz *the* cure for persons suffering from pulmonary disease." We do not wish to make statements rashly, but we have a shrewd guess that such an advertisement never emanated

from the pen of a medical man. We would not be at all surprised to learn that it was inserted by an active and enterprising hotel-keeper in that mountain valley, who has good reason to believe in Davos, it having not only restored health to his lungs, but added riches to his pocket.

Dr. Tibbits' second proposition is "that certain theories connected with etiology, or the causes of disease, have become so fashionable, and the professional mind is so engrossed with them, that there is a tendency not only to check scientific investigation in other directions, but to obscure the actual, and it may be obvious, source of disease." The theories to which the doctor refers are those grouped as the "Germ Theory of Disease." His caustic criticisms of Bacterio-mania and account of the Battle of the Bacilli are rather entertaining. We cannot accept all he says; but when we consider the extravagancies into which some of the followers of the more distinguished upholders of the germ doctrine have been led—when we find a German surgeon declaring in a public print his belief that treatment of a scalp-wound with anything other than carbolic acid, or some such approved antiseptic remedy, should be considered penal—when we hear of hospital surgeons telling their students that, if they are honest men, they will continue to use a troublesome and, as recent experiments tend to prove, even a dangerous spray-engine in the treatment of wounds—when we read that on the Continent "the chance of inhaling tuberculous bacteria has been met by a sanitary spittoon"—when in Germany we find "Cellulose Closetpapier mit Salicylsäure getränkt," and in France, "Feuille hygiénique de la siége des water-closets avant de s'y asseoir garantit de tout contact malsain et dangereux"; when we are told that the ordinary functions of life cannot be performed without a fear of these dread little rascals, "the germs," we do think that the criticisms of Dr. Tibbits are not altogether uncalled for.

It must not be supposed that he questions the existence of bacteria. No one thinks of doing so; but, as he truly points out, their relationship to disease is not as yet settled. We are prepared to go further than the doctor, and admit that the evidence seems to point to a more intimate relationship than he will admit; but as the theory is becoming fashionable, there is no doubt that many are getting beyond established facts and drawing conclusions on which they found modes of treatment that tend to hinder rather than advance medical science. Students of to-day are taught such an elaborate system of wound-treatment, that it is a surprise to many of them to see ugly cuts heal under the application of clean cold water. There are signs of a revulsion. Let us hope that it will not eventually lead into doctrines and practices as absurd (and probably more dangerous) than some of those we have mentioned.

The remaining propositions or statements are three in number. They are simply statements of fact, and so self-evident that the doctor deals with them satisfactorily in short space. They are that many so-called novelties in the medical world, like fashions in other departments, are simply revivals of old remedies or ideas, but it may be more or less in disguise; that remedies tend to be partially or totally neglected because of their abuse (a statement fully dealt with in the first proposition), and that there is undoubtedly in the present day a tendency to the rapid multiplication of remedies, many of them of questionable value. The admission of new remedies to the Pharmacopœia is not always to be regretted. New remedies have sometimes proved of the utmost value, but most men will be inclined to agree with Dr. Tibbits that, "as physicians and surgeons, it is not judicious to be too anxious to change our old therapeutic garments for a new suit, which, although very striking at the first glance, becomes on more careful inspection deceptive, frightful, or even dangerous."

International Health Exhibition.

LONDON, 1884.

SEVENTH PAPER.

MEMORANDA FOR THE GUIDANCE OF EXHIBITORS,

Drawn up by the Sub-Committees and approved by the Executive Council.

Water Supply and Sanitation of the Dwelling-house.

This Committee deal with the following Classes of Group 3:—21, 22, 23, and 27; the official classification is given on page 12.

With a view of bringing before the public examples not only of thoroughly good sanitary arrangements, but also of the defects existing in ordinary houses, the Committee have, with the sanction of the Executive Council, undertaken to supervise the erection of two model dwellings in the grounds of the Exhibition, one of which will show, as far as can be done on the limited scale, a house with good sanitary arrangements, while the other will show the usual defects. In the latter case, no attempt will be made to exaggerate the ordinary conditions; but the object will be to reproduce accurately a state of things unfortunately but too common.

In erecting and fitting these typical houses, the Committee will have to rely on the assistance of manufacturers; but they wish it most distinctly to be understood that while they must of necessity adopt, for purposes of illustration, fittings made by particular manufacturers, they do not in any case recommend these special fittings for adoption, or wish to give the idea that the special fittings adopted are superior to those produced by other makers. In many cases it is quite certain that there are several appliances all equally good, but the space at the disposal of the Committee will not permit examples of all these appliances to be shown.

Besides these typical illustrations, the Committee will be glad to receive from manufacturers whatever examples they may think proper to submit for exhibition of the articles indicated by the classification. It is to be borne in mind that in all cases the exhibits must have a distinct bearing upon health, and that architecture or building construction generally is outside the scope of the Exhibition.

The exigencies of space will not permit the Executive of the Exhibition to invite contributions illustrative of schemes for drainage, water-supply, &c., applicable to towns or large districts, and it is therefore to be understood that the exhibits must be confined to domestic sanitation alone.

The classification sufficiently indicates the class of objects desired for exhibition. The Committee would impress upon exhibitors the desirability of, as far as possible, exhibiting their own manufactures only, not those of other makers; and also of restricting their exhibits to typical examples of their appliances, and of not sending more than a single example of each article. Indeed, the Committee cannot undertake to find space for things which are substantially duplicates of one another.

As the Exhibition will be a place of popular resort, and is intended for the instruction of the general public rather than specialists, it will be desirable that exhibitors of sanitary wares should assist the Committee in making such arrangements as will bring the articles which it is necessary to show before the notice of the public in a manner as agreeable as possible. It will, of course, be necessary to show examples of closets, urinals, &c., but these should be so arranged that, while it may be possible for anybody desiring to inspect their action to have full opportunity of doing so, they yet will not attract general attention in an undesirable manner.

The Ichthyophagi, or fish-eaters, the population along the sea-shore, or along the banks of lakes and large rivers, are a healthy, fertile, prosperous people; reputed to be unusually prolific.

Vaseline has been recommended as the best substance for mounting corks and glass stoppers to prevent the evaporation of alcohol from specimen jars, or from bottles containing chloroform, &c. The cork or stopper should be well smeared and firmly inserted.

Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

DISEASE GERMS IN WATER.

Sir,—In your last issue you ask the question, "Can any system of filtration of water be depended upon for the destruction of disease germs which may be therein contained?" To this question I beg respectfully to reply, "Yes." And I will, with your kind permission, endeavour to prove it.

The first point to consider is, What are the germs of disease? and the second, What is the system of filtration that will free the water of such germs? You yourself say that the germs of cholera and typhoid fever measure the five or ten thousandth part of an inch. We thus know what it is that filter-makers have to deal with, whether they be called bacteria, bacilli, infusoria, animalcules, microbes, spores, or germs, they are microscopic things, but still they have a body more or less active, and so capable of being separated from liquids by filtration. The only point, therefore, to consider is, What system of filtration can be relied upon to effect this object?

For the purpose of illustration we may imagine a river carrying down in its course all sorts of impurities. We might put across its bed a grating that would stop the dead cats, dogs, and sticks; a little lower down one that would arrest the dead rats and mice; further on one to stop the dead leaves, weeds, and fish; again, one that would stop the water-fleas, and, after this, a succession of gratings, or metallic screens, the passages or pores of which would diminish in size, until we reach a degree of porosity which would not allow a germ measuring the twenty-thousandth part of an inch to pass.

This plan would, of course, not be practicable, on account of the expense it would entail, but I think you will agree with me that it is scientifically possible to attain this result.

By the way, there is a considerable misapprehension on the part of many well-informed people as to the possibility of destroying the vitality of these germs by chemical means or by boiling. I have it on the authority of Dr. Hodgkinson, of the Government Science School, Kensington, that the vitality of bacteria is not destroyed by any chemical agent, not even by strychnine. They may be benumbed and rendered apparently lifeless for a time, but if they are placed in a suitable field they soon recover their activity. Some of these low germs or seeds of life do not seem to be affected either by chemical poisons or by being subjected to the action of boiling more than the seed contained in cherry stones. But we must return to our subject, which is the separation of these germs from water by filtration.

The water companies, in purifying their supply, exactly reverse the plan we have described above. Their finest screen is the first filtering medium to be met by the suspended impurities. This screen, formed of sand, is, at best, but coarse. If a vessel be filled to the brim with the sand used by the companies a great deal of water can be poured in the vessel before it overflows. This shows that the voids or passages between the particles of filtering medium are comparatively large, and certainly not able to arrest germs which measure the five or ten thousandth part of an inch; and if once they pass the first and finest barrier, they have plenty of room in the coarse gravel and shingles below to breed and multiply; they easily pass away with the filtered water in the full vigour of life, and it sometimes happens that the filter bed is really a bed of infection, as was recently proved to be the case at Bangor.

The domestic filters brought hitherto before the public have been constructed of screens made up of sand, charcoal, or other substances in a granulated state, so coarse that the little germs in question have had no difficulty in making their way through, and thus far I must agree with you, that "something more than mere filtration, as commonly understood and practised, is required."

I have now to prove that there is a system of filtration of water which can be depended upon for the destruction (or separation) of disease-germs which may be contained therein. This system is that embodied in the principle and action of my patent "Filtre Rapide," which has now been adopted by the War-Office, to the exclusion of all others. Fifty of these filters—capable of purifying upwards of a thousand gallons of water per hour—have been sent to Souakim for the use of the troops (*Vide Daily News*, March 1, 1884, and the *Engineer*, March 7, 1884).

In my patent "Filtre Rapide," the first screen consists of a thick layer of granulated carbon, which arrests the coarser impurities found in water, and prevents the finer screens being choked up by them. The final screen through which the water has to pass consists of a pure asbestos tissue, a square inch of which contains hundreds of thousands, if not millions, of perhaps the finest known fibre, and the water passes through this asbestos-cloth more by capillarity along the fibres than by percolation. But, fine as this filtering medium is when wet, it would fail to arrest all the little germs. To obtain a screen that will absolutely arrest them all, I deposit on the asbestos-cloth a layer of prepared carbon, ground to an impalpable powder. It is, in fact, in as fine a state of division as it is possible to be. The layer is perfectly even, being deposited by the current of the water first passed through the filter, and it offers a barrier a hundred-fold closer than all the metallic screens which we have been imagining as necessary to arrest the bacteria. It will be understood that the pores of metallic or sand screens have smooth surfaces and fixed channels, whilst the surfaces of the particles of carbon which I use are extremely rough, and each particle contains in itself innumerable pores, so that the water which has to pass through it is divided in its smallest atoms, hence its "chemical or physico-chemical" action (described by the *Engineer*, March 7, 1884). It would be difficult to calculate the amount of straining and adhesive surface presented to the water by a square inch of this filtering medium, one-eighth of an inch thick. It can, however, be safely estimated at upwards of 200,000 square inches.

Now let us for a moment revert to our imaginary river and series of screens.

We have seen that the first grating has stopped the dead cats and dogs. Well, if these are not removed within a certain time, they fall into decomposition and become partly dissolved; and so the water carries with it dissolved cat and dog. This illustration necessarily points to the necessity of removing periodically the impurities arrested by filters. This is now so well recognised that even *Punch* says the difficulty is to find the filter (among the old-fashioned ones) that will do the least harm, and I need hardly add that whoever values his health and that of his friends, should put to himself this simple question: If it be necessary to cleanse my cistern, how much more important is it to cleanse my filter? And to clean a filter does not mean to scrape a block or to blow through the tap, but to take the filtering medium bodily out of the filter, and throw it away along with the impurities arrested.

The Government have directed that my filters which they have sent to Egypt shall be so cleansed once a month, or, if the water be very bad, once a fortnight. In London, once or twice a year will suffice.

This letter has reached a length far beyond my first intention, and my only excuse is the importance of the subject.—I am, sir, your obedient servant,

P. A. Maignen.

22 and 23, Great Tower-street, London, E.C.,
March 15, 1884.

THE BATTLE OF THE FILTERS.

Sir,—I am glad to find that in Health for March 14th you call attention to, and invite evidence on, the most important subject of filtration. During the Fisheries Exhibition last year a new form of filter known as the "Filtre Rapide" came under my notice, and since then I have devoted some time to careful experiments with it. The filtering medium in this case consists of a layer of very fine powdered carbon which is deposited on asbestos-cloth. The results of my experiments have proved that not only are mechanically suspended and dissolved solids removed from water by this filter, but that gases dissolved in water are also most effectually removed. I prepared solutions charged with ammonia and sulphuretted hydrogen—two gases which, it is well known, are produced during the decay of organic matter, and which are always present in sewage. On passing these solutions through the filter I found that the

gases were removed, the filtered water not containing even a trace. Now, whatever may be the exact molecular relationship which exists between the gases in question and the water in which they are held, there is no doubt but what the gas is in an extremely fine state of division. The finest chemically-prepared precipitate, consisting of particles in a most minute state of division, is abstracted from the water by this filtering medium. It appears, therefore, even more than probable that the most minutely divided matter—inorganic or organic—including even germs and bacteria, are removed from water by this system of filtration. But although the filtering medium employed may possess most powerful oxydising properties, yet it becomes exceedingly difficult to prove that the germs which it doubtless removes are also "*destroyed*." It would be interesting to know what experiments have been performed with the view of proving that any of the media employed at present for filters proves this property.*

Trusting that the importance of this subject will be accepted as some excuse for the length of this letter,—I remain, sir, yours faithfully, JOHN J. PILLEY.

The Chemical Laboratory,
Charterhouse School of Science, Goswell-road, E.C.
March 22nd.

QUERIES AND ANSWERS.

[IMPORTANT TO CORRESPONDENTS.—We have again to call attention to the fact that, while every effort is made week by week to deal with the enormous mass of correspondence which reaches us, we cannot undertake to answer queries save as space permits. All queries are attentively considered and replied to, but in no case can any query be answered in the same week as that in which it is received.]

[A number of replies have been crowded out of the present number owing to pressure in space. These replies will be duly given next week.]

[Letters addressed otherwise than to the *Editor* of HEALTH, at 74, Great Queen-street, London, W.C., will not be attended to.]

[We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.]

GENERAL.

ABEL B.—Carpus is simply a technical term for the wrist; the palm of the hand being called the metacarpus.

J. ANDERSON.—Woolsorters' disease is certainly caused by a living particle of the nature of a germ.

MABEL.—The practice is highly dangerous, and cannot be indulged in without great risk. We should strongly advise you to try some other means. It is quite evident you are not in a good state of health.

ERGO.—We do not understand your inquiry; please write again, stating more plainly what you require. Queries, to have a chance of receiving an early reply in HEALTH, ought to be short and concise. If you got a glimpse of even a day's correspondence which arrives at our office, you would understand the necessity for such a request.

MRS. WILKINS.—If you will submit the recipes to us in manuscript, we shall be able to judge whether or not they are suitable for HEALTH.

W. L.—The proportions are good. The number of sheets required in the condenser depend so considerably on the way in which it is built up, the thinness of the dielectric, &c., that to lay down any rule would be unsafe. Experiment is the best teacher; start with 20. Certainly 1½ in.

SANITARY.

INTERESTED.—Paris green is an aceto-arsenite of copper. Five and a-half ounces of this poisonous compound have been found in a green tarlatan dress of 16 yards. In bedroom chintz, an amount of arsenic equal to $45\frac{1}{10}$ grains have been found in each square yard. It is a mistake to suppose that only green papers or materials contain arsenic.

VOX.—The incident you mention, we believe, is that of Grasseni, whose voice was reduced an octave by the relaxing effect of English air. Her voice recovered on her return to Italy.

* This is precisely the point at issue, and regarding which we cordially invite further evidence.—ED.

WORKMAN.—Brassfounders' ague appears to be caused by the oxide of zinc.

INSPECTOR.—The "Alkali Act" bears the date 1863.

MEDICAL.

PUERI MATER.—Medical opinions seem to differ materially regarding your boy. We are discharging our best duty to you in advising you to take the child to a good London physician. On receipt of stamped addressed envelope, we shall send you name of physician in whom you may have all confidence.

F. W. S.—No. Not too often. We should recommend you to take a little cod-liver oil for a time, after your meals, by way of strengthening you; and you might likewise try the effect of sniffing "Alkaram." For scurf in the head, use a soft brush and apply glycerine of borax at night to the roots of the hair. Who told you your skull was thinner than that of other people?

RHEUMATIC.—We believe the expression applies to new cider. It is, of course, an American expression. We should think in certain cases the remedy you mention is likely to do good.

PENITENT.—Yours is a common case; but you must on no account be depressed or morbid, as you will get perfectly well by attention to ordinary health matters. In your case we should recommend open-air exercise (not to be overdone), cold sponging each morning, sleeping on a hard mattress, avoiding fluids late at night, and for a short time taking a teaspoonful of Fellows' "Syrup of the Hypophosphites" twice daily in a wineglassful of water, before meals.

MRS. FREETHINKER.—We fancy in your case there may be some slight tendency towards gout or rheumatism; there are certain other features in your case which, in our opinion, render it desirable for you to have a consultation with a physician. This will certainly constitute the only sure means of giving you relief. We shall be glad, if desired, to send you the address of a reliable authority on receipt of stamped addressed envelope.

L. M.—We sympathise greatly with a case like yours. We do not think that yours is a case for drugs. You naturally exaggerate your troubles a little. Our advice to you is to take a thorough change; probably either Scotland or the seaside will suit you. Prior, however, to leaving town we should advise you to see a physician accustomed to treat cases such as yours, and we shall be glad, if desired, to send you addresses on receipt of stamped, addressed envelope. You mistake the nature of the secretion you name, and an interview with a physician, considering the past history of your case, would satisfactorily resolve many of your doubts, and greatly relieve your mind. We shall be glad to be of any further service.

Z. Y. X.—Try eating charcoal biscuits, and specially look to the condition of the teeth. An offensive breath, as often as not, arises from want of care of the teeth. Use camphorated chalk as a tooth-powder.

JOHNSON.—You must not get into the habit of taking aperients; follow the advice regarding light, nutritious food given to "W. A. P." below. Also take a little "Pepsine" along with your food daily. It is possible that in your case the addition of vegetables to your dietary may assist you. We shall be glad to hear from you again, after a trial of this advice.

W. A. P.—You seem to be in a general state of low health. You must avoid all stimulation either of body or mind. Look to your food first of all, let it be light and nourishing; give up tea, coffee, and all stimulants for a time. After food you might take a powder consisting of 4 grains powdered rhubarb and 3 grains of "Pepsine." If this treatment does not improve your condition, write again.

WELLINGTONIAN.—We think the following will do you good:—Citrate of iron and quinine, one and a half drachms; carbonate of ammonia, 2 drachms; tincture of orange-peel, 2 ounces; add water to make up 6 ounces; a tablespoonful thrice daily. Let us hear the result of this treatment.

D. F. K.—There is very little doubt that the surgeon's advice is both sound and judicious. Of course the jacket may be removed occasionally for washing the body. You should consult your doctor concerning every phase of the child's illness, as it is evident the child requires more or less constant medical supervision.

T. T. TOY.—We fancy the following will do you good:—Sulphide of lime, 24 grains; sugar of milk, half an ounce. Mix thoroughly; keep in a stoppered bottle. Take five grains, or as much as will lie on a sixpence, every four hours. Food to be nourishing and not over stimulating.

W. SCOTT.—Thanks for your letter. The practice you name is decidedly injurious to health. We note the contents of your letter for future use.

MR. D. R.—Yes, drinking Potass Water is certainly good for you. See advice to "Tempus" and "Dart" in No. 51, and if not improved write again.

Nox.—1. What you complain of is perfectly natural, you must not grow morbid. See advice to "Dart" in Health, No. 51. 2. Try the effect of a little pure Vaseline, if this does not relieve the itching apply a lotion, consisting of one drachm bicarbonate of soda added to one and a half ounces of glycerine. 3. No abnormality in what you complain of.

An Appreciator.—We do not know the hair preparation to which you refer. You should use that recommended to "Russell" in No. 48 Health.

Agnostic.—You are evidently morbid, and require to exert a strong mental effort as well as to adopt physical means of recovery. See advice to "Dart," Health No. 51, and follow the same. By attention to your general health you will recover from all your symptoms.

A Thankful Subscriber.—There is no doubt that from your letter you have worked yourself into a highly nervous and irritable state of mind. Your cure would be accomplished, by attention to your general health, by a change of air, and by a trial of the tonic and other means recommended to "Dart," in Health No. 51. Glad to be of any further service.

Hamlet.—We cannot undertake to search a file of Health for you; our time is much too valuable for such a proceeding. If you care to state your exact wishes we shall endeavour to give you a special reply.

A. Nicholson.—We note your letter, and hope to deal with the subject you mention in good time.

Dot.—Not the slightest fear of what you dread. Use a little warm oil as an application to the sore part; it will get quite well in a little time.

A. T.—The symptoms you describe resemble those of St. Vitus' dance, especially from their affecting the left side. The case should be seen and treated by a competent physician.

H. H. Later.—We do not think, considering the improvement you have made in the basement of your house, that the soil can have the slightest effect upon your ailment. Your district is quite as healthy as most others.

John Hamilton.—We quite agree with you; the practice of boxing children's ears is not merely liable, as in your own case, to cause permanent deafness, but is objectionable on many other grounds. No wise teacher ever punishes a child so. It would be well if School Boards issued some distinct instructions regarding this baneful practice.

Trust.—See and follow advice given to "Dart," Health, No. 51. It is quite evident you are in a highly morbid state. There is, however, no cause for any alarm.

R. W. F.—We think a vegetable dietary should be tried as an experiment in your case. Possibly this may obviate all necessity for aperients; but, if not, you might try a little Æsculap Water, taken occasionally in the mornings, as a mild aperient. Regarding the mercurial preparation, there is, of course, a danger in using any such drug for any length of time. Your medical advisers should, however, be the best judges of the advisability of your continuing or leaving off the preparation.

Hazelhurst.—The only establishment we know of which would be likely to receive your boy is the Earlswood Asylum for Idiots. You should write there, stating the particulars of the case, and obtain information regarding charges, &c. The Royal Albert Asylum, at Lancaster, is another institution regarding which you might make inquiries.

Edina.—In a case like yours we should strongly advise you to undergo a thorough medical examination. There are symptoms in your case which may possibly be of comparatively trivial nature, but which, nevertheless, should be investigated by a competent physician. We shall be glad, if desired, to send you the address of a competent London authority on receipt of a stamped-addressed envelope.

C. V.—The best light and handy weighing-machine we know of is Fairbanks'. The price is £4; and it may be seen and inspected at 108, Upper Thames-street, London, E.C.

Sperans.—What has been said to "Edina" above regarding the advantages of a thorough medical examination applies likewise to your case. We certainly approve of your giving up work for a time and seeking a change of air. The foods you mention are nutritious, but we should recommend Brand's "Beef Essence" in preference to any other or "Kreochyle." There are no indications whatever in your letter of epileptic symptoms. Our own opinion is that you simply require rest and fresh air. The tonic recommended to "Allan Grey," No. 51 of Health might be tried. Glad to be of any further service if necessary.

Berbice.—Possibly an injection once or twice daily of a little Condy's Fluid" and tepid water—about one part Condy to twenty parts water—would do you good. The advice given to "Dart," in No. 51, likewise applies to your case. In future you will kindly address editor, not publishers.

Smabbutt.—1. It is impossible to prescribe a depilatory which will remove superfluous hairs without to a certain extent injuring the skin, or at least irritating it. The following is a depilatory of the type commonly used:—Sulphide of sodium, three drachms; lime, ten drachms; starch, ten drachms. Mix with water to make a paste. Apply a little to the skin for two minutes, then scrape off. 2. In all probability the mattress might be so disinfected, but in the case of a straw mattress, we should esteem it safer to destroy it.

J. M.—No doubt a sea voyage would do you good. See advice to "Dart," No. 51.

Seaside.—We should advise you to have a well-fitting elastic stocking made for your leg, and to sleep with your feet elevated on a pillow, so as to favour the return of the blood in the veins. You ought to know also that constipation should be avoided above all things else in your case.

W. Waddel.—Try the effect of hot salt-water bathing at night, and if the pain is troublesome, take 15 grains of Bromide of Potass in a wineglassful of water on going to bed.

Elder Lee.—Yes; you might try a little Æsculap water as a mild aperient in the morning, and "Feltoe's Specialité Lime Juice" would also do you good. We might suggest that a little quinine taken at any time you are threatened with an attack, would probably tend to cure you.

R. B. L.—No need to be alarmed, and had certainly no need to begin any such practice as you mention. See, and follow, the advice given to "Dart" in No. 51. Take more open-air exercise, and don't allow yourself to become morbid in any way.

Maltine.—Yes; maltine is in itself a valuable means of bodily nourishment. You should try the Maltine Company's preparation of this substance in combination with cod liver oil.

Anxious Father.—We sympathise very much with you in your anxiety regarding your child. There seems no doubt it is a somewhat complex case, and we think our duty to you best discharged by advising you to consult a reliable authority on children's diseases. The address of such authority we shall be glad to send you on receipt of stamped addressed envelope.

Sallie.—You might try the effect of hot salt water baths taken occasionally at night. Rubbing with warm oil over the affected parts may also tend to ease you.

Digna.—You should note that it is the Editor and not the Publisher of Health who receives and answers inquiries. In future, no letters can be answered, which are not properly addressed. Your best plan is to consult a surgeon, who will be able without pain to remedy the condition of which you complain.

Christchurch.—We do not think that the soda can really account for any of the effects you mention. Certainly, to use crude soda in boiling vegetables is a baneful practice; but the small quantity of carbonate used, according to your own account, cannot have any perceptible influence on your health. We have forwarded your letter to a practical authority on cookery, and will publish reply when received.

Cheveux.—Try the recipe recommended to "Russel" in No. 48, as a hair tonic.

Diamond.—To a certain extent we agree with you. There is no doubt that the "cram" system is a highly complex matter, and one involving so many issues pertaining to health and otherwise, that it can only be settled by calm and full consideration between teachers, medical men, and the Education Department. One thing seems perfectly clear and reasonable, namely, that we must first consider the health and physical constitution of the child, and its education afterwards. Do not you think that parents by the exercise of a little common intelligence could supervise sufficiently the health and abilities of their own children, and at once prevent all ill effects by ceasing educational over-pressure when ill effects appeared?

Knock-Knees.—Attend to your general health, and if you can afford it, try horse-riding. Sleep with a pillow between your knees, and fasten the ankles together with a handkerchief. Write to Messrs. Dowie & Marshall, 455, Strand, London, and have the heels of your boots raised and extended along the inside of the waist of the boot, so as to throw the feet slightly on one side. The boots to be strong lace-up ones, which will support the ankles.

J. Bunyan.—See advice given to "Knock-Knees" above regarding the advisability of your having a proper boot made by Messrs. Dowie & Marshall. You have your boots to thank for your bunion, though you may not think so. Try the effect of rest and applying the following lotion on lint, covered with oiled silk, for three or four days:—Two drachms tincture of arnica to be added to 8 oz. of water to make a lotion. The tincture of veratrum viride might be painted on the inflamed bunion. You might try for the fleas the "B. B. B. Insect Destroyer."

Senex.—We should advise you to try the effect of a good tonic, and of still further attempting to reduce the opium. The tonic

[*Continued on page* 432.

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recommended to "Wellingtonian" in present number of Health, should suit you. It is just possible that you might aid your cure and break off your habit by taking 20 grains bromide of potass when the craving is most annoying. Glad to be of any further service.

Bohemian.—Your best guide to the Hydropathics of the United Kingdom would, we fancy, be either the articles on "Health Resorts" which were published in the first volume of Health, or the hotel advertisements of "Bradshaw's Guide." Most of the Hydropathics were noted in the Health articles, along with the characters of their situation. We are afraid the demands on our space will not permit us to adopt your suggestion. Any readers having anything to communicate may freely use our "Reply Columns."

Miss Dent.—See reply to "E. H." below; the advice there given should be taken by you.

E. H.—In such a case as yours, in which a general derangement of health seems present, we think you would gain most advantage from a consultation with a competent physician. He would be able to advise you thoroughly as to the best means for restoring health. We might only say that in our opinion a change of air and a visit to the seaside would probably effect a wondrous change in your state.

Highbury.—It is probable the irritation from which you suffer is due simply to local causes. We should advise you, firstly, to try the simple plan of avoiding all stimulants, attending strictly to the bowels, avoiding fluids late at night, and drinking freely during the day of barley-water. If this does not cure you, write again.

Sussexonian.—See advice to "Highbury" above. Small doses of "Æsculap Water" taken in the morning would prove a suitable aperient for you. There is only some local irritation, which careful attention to the general health should cure.

Signa.—We cannot assist you further. What you aim at is a physiological condition which really depends on general health alone. If you attend carefully to your general health, and use cold sponging each morning, avoiding stimulants, what you desire will doubtless follow.

E. L.—(When you require a reply in this column, you should attend to our instructions, repeated weekly, that it is the Editor, and not the Publisher, whom you should address. Correspondents who do not attend to this plain rule are liable to have their communications neglected.) Pumice-stone has no effect in preventing the grown of superfluous hairs. It cannot reach the hair-roots, which are deeply imbedded in the skin.

L. C.—To prevent cramps, sit and sleep with your feet raised. By raising the foot of the bed on a block of wood, cramp in bed is often prevented. Try also rubbing with warm oil before retiring to rest.

Ein Kraake.—The temperature of a cold bath ranges from 33° to 65° Fahr.; for a cool bath the range is between 65° and 75°; a temperate from 75° to 85°; a tepid 85° to 95°. You should be able to judge from your individual symptoms the limit of cold you can stand. In ordinary health a cold bath may be taken at the temperature of the water as drawn from the cistern, or after having remained in a bedroom over night. 2. Yes, varicose veins may be surgically treated; the operation is not serious, but would necessitate complete rest for a time.

Coningsby.—Try the effect of a change of air. You suffer probably from overwork. Bromide of potass not suited to your case. Change residence for a time and try country air. Take open-air exercise, and you will sleep well and gradually recover your tone.

J. J. D. G.—The medical advice your friend had is probably the best he could have obtained. The cure should consist in change of air, and in light, nourishing food. Try Morson's "Pepsine" with the food. It is not a case for drugs, but simply for measures calculated to improve the general health. Steer clear of all quacks—herbalists and others. Pulvermacher's belts (194, Regent-street, London, W.) are thoroughly genuine, in that they produce electricity in a marked degree. Send us any particulars regarding your quack adventures.

Erin.—1. Yes; cod-liver oil or the emulsion would do you good. 2. The nerve tonic you name is an excellent one and might certainly be tried. 3. Difficult to say. Have your eyes examined by a thoroughly competent oculist. Never trifle with eyesight. If spectacles are ordered, wear them. 4. Try a little Vaseline rubbed on the hands each night.

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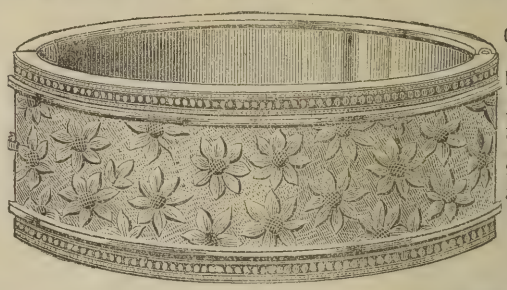

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